THE MOUNT COOK
AND SOUTHERN LAKES
TOURIST COMPANY LTD

ENVIRONMENTAL IMPACT REPORT
For
REMARKABLES SKI FIELD

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THIS REPORT SUPERCEDES ALL
PREVIOUS REPORTS.
10th December 1975

Introduction

This report has been prepared by the Mount Cook & Southern Lakes Tourist Co. Ltd. and endeavours to present an analysis of the environmental impact of constructing and developing ski fields and access to them behind Double Cone in the Rastus Burn Valley and the Doolans Creek area beyond the Remarkables as viewed from Queenstown. Ground surveys have been carried out for the access route, several suitable ski tow runs observed and estimates made, including a financial programme of expenditure extending over '7 years to 1983. (See Appendix B, programme only).

The format of this report is consistent with the Commission for the Environment's Publication "Environmental Protection and Enhancement Procedures to be Followed": dated 16th November 1973. The Impact Report has been called for by the Commissioner of Crown Lands and the need for such a report confirmed with Mr J. Bamford, Assistant Commissioner for the Environment, at a meeting on the 2nd of May 1974, when he was notified of our intentions to prepare such a report.

This report undertakes to identify the environmental impact of the proposed ski field to enable the Land Settlement Board to adequately assess the application for a lease of the ski field. Furthermore, the Lake County Council have been provided with this information to decide the application for a change of use within the district scheme.

Name of Proposal

Double Cone: Remarkables Ski Field and Access Road.

Stage of Commitment

The project is in the planning and designing stages.

Preliminary surveys providing the feasibility of the access road have been carried out (See Appendix A), and it is expected that surveys and further planning of ski lifts and other facilities will be taken a stage further when the initial access track and initial site preparation is completed during the coming Summer of 1976/77. The overall project is considered feasible, both physically and financially by the proposers.

Objectives and Options

OBJECTIVES

i) The purpose of the project is to provide a popular public amenity as an additional facility to the present ski field at Coronet Peak. At present the Coronet Peak Ski Field is becoming crowded and the scope for expanding skiing facilities is definitely limited. It is estimated that the fully developed capacity will be reached in four years time or sooner. Failure to provide the additional skiing resources will make it more difficult for New Zealanders to share in a sport of increasing popularity.

ii) Develop a high altitude ski field to eliminate risk of lack of snow (refer Reasons Para.2).

OPTIONS

Several localities near Coronet Peak, for example Ben Lomond, were looked at for the likely ski field within reasonable distance of the existing accommodation in Queenstown. We believe that the maximum travelling time that is acceptable to the public is 45 minutes or approximately 15 miles. This opinion is gained from the experience of operating Coronet Peak Ski Field which has an approximate travelling time of 45 minutes.

The Remarkables Ski Field was considered the only option worthy of development.

REASONS

i) The complete utilization of Coronet Peak Ski Field at its present rate of increase will occur in the near future.

ii) The altitude aspect will give a better guarantee of snow than at Coronet Peak and the extended season will further increase the use of facilities in Queenstown. More importantly, it will enable the Tourist Industry to guarantee the New Zealand and overseas sportsmen a more certain skiing season. This in turn will allow the greater use of overseas ski instructors and the improvement of the standard of the sport. In short, the combined attractions and

variety provided by the Coronet Peak and the Remarkables Ski Field, will be a powerful magnet for skiers and visitors for a longer period each year than at present, and hence will aid export earning from this source.

iii) The utilization of Queenstown accommodation and other facilities will mean that such development need not take place elsewhere to service another ski field, with the resultant adverse effect on the environment. This double utilization covers all facilities such as hotels, transport, post office, commercial, hospitals, sewerage etc.

iv) Sightseeing and educational possibilities during the Summer months will be similar to what is provided at Coronet Peak at present. In addition, easy access will be provided for tramping, climbing and allied sports during the Summer months, allowing closer inspection and enjoyment of the high country adjacent to the ski fields.

v) As stated above, Coronet Peak development is definitely limited, whereas the scope for future development at the Remarkables field is considerable. We intend to extend skiing facilities into the Doolans Stream area which is beyond the Rastus Burn Basin as soon as practicable. This area is ideally suited for development and has the potential to cater for the long term requirements of a greatly increased number of skiers.

The quality and extent of this snow field is superior to any other known area adjacent to Queenstown. The only feasible means of access to this huge area is by chairlift from the Rastus Burn Valley.

This means in the long term that no further access to ski fields need be developed in the Queenstown area.

Description of Proposal

ACCESS

Dealing specifically with the Remarkables site, the options for access are:

1. Mechanical access.
2. Road access.

After having carried out our initial studies we are firmly convinced that option (2) is the only viable prospect. Option (1) must be eliminated because of:

1. The real limitations of the ability to carry sufficient people at the required time.
2. The costs are prohibitive as will be seen in the letters from C.W.F.Hamilton Co. Ltd. (See Appendix O).
3. As the patronage of the ski fields increase (Refer Reasons 5) so must the carrying capacity thus requiring additional lifts to be installed when required, whereas once a roadway is developed, this will serve all the ski fields and no additional disturbances will be necessary.
4. The visual effect of the large tower supporting the chairlift cables would be greater than development of an access road: the disturbed land on the roadside can be re-sown whereas no camouflaging of towers can be reasonably carried out.
5. In event of a major breakdown of the chairlifts or a power failure, a complete evacuation would be extremely difficult over such rugged terrain.

The options for development of the access road are limited and the route shown is the only approach feasible. Before selecting the proposed route, other alternative routes were investigated. However, these were ruled unsuitable for reasons which included unreasonable travelling time and distance to the ski field facilities, large snow drifts on the lea side of the hill etc. (Refer letter from Frederick Sheppard & Ptnrs. Appendix A).

The proposal at present is to construct an access road to the car park at 4,000 ft altitude, followed by either a road or access lift up to the ski lift terminal at 4,900 ft altitude. The access roading requirements are best described in the report to the Mount Cook & Southern Lakes Tourist Co. Ltd. by Frederick Sheppard & Ptnrs., Consulting Engineers, dated January 1974 which contain the following headings:

1. Introduction
2. Location
3. Survey
4. Terrain
5. Road Alignment
6. Alternative Routes
7. Other interested parties
8. Programme
9. Construction Programme
10. Standards
11. Estimates
12. Further Survey Work
13. Supervision of Construction
14. Further Reports
15. Conclusions

These along with the following drawings fully describe the roading proposals to date. These are all included in Appendix A attached to this report:

Drawings: 7131/1/W1 - Locality Plan
" 7131/1/W2 - Boundaries etc.
" 7131/1/W3 - Access Road Plan
" 7131/1/W4 - Typical Road Sections

Essentially, a one way access track 14 ft wide and 7 mile 70 chain long will be formed up to the ski terminal area at 4,900 ft on the final road alignment, in the Summer of 1977. The full width formation will be formed over to the 5 mile 50 chain or the 7 mile 70 chain mark during the next Summer of 1977/78 along with the facility proposed in Appendix B.

SKI FIELD FACILITIES

The plans 7131/1/W1 - W4 indicate the location of the access route, the lower and upper car parks and in a purely diagramatic way, the ski terminal facilities and ski fields themselves.

The project at present plans for three ski field areas with chairlifts and an access chairlift from the car parks near the lower terminal area at 5 mile 50 chain at 4,000 ft. Alternatively, if snow conditions allow, road access from the lower car park to

the higher one will be provided instead of a chairlift. In either case a track will be built to the 4,900 ft altitude for immediate access, construction of any access lift, summer maintenance work, installation of equipment, and emergency evacuation.

The project plans for full ski field facilities to be established on a permanent basis. These facilities will be similar in function to those at present established at Coronet Peak and other ski fields, though the Company's intention is to achieve an integrated design to contemporary visual standards blending with the environment and incorporating a basic architectural theme similar to that which won the Mount Cook Company Commendation for meritous design of the Mount Cook Air Terminal at Mount Cook, from the Minister of Tourism during 1975. The Company intends to engage the services of the same Architect, Mr T. Ibbetson, B.Arch. (Hons), A.N.Z.I.A., A.R.I.B.A., a registered architect to design the base facilities. The Architect's impression is included in Appendix P to illustrate the type of buildings that could be used in the base facilities.

It is planned that one of the ski chairlifts and the access road will be used for off-season sightseeing looking out to Queenstown and Lake Wakatipu from a point a mile to the North of Double Cone. There will be no projection above the skyline. These sightseers will be kept to a well defined track so as not to damage any flora in the area.

It is proposed that there will be accommodation for approximately 6 staff only in the facilities area on a semi permanent bases. There will be no commercial accommodation. It is intended that there will be facilities provided for all skiers requirements including common room, ski hire, tea rooms, snack bar, toilet facilities, first aid, etc. Maintenance and equipment areas will be provided as well as parking areas for coaches and an area for approximately 500 cars at both upper and lower car park areas.

Description of Existing Environment

GENERAL

A general description of the existing physical characteristics may be gained from reading the following sections of Appendix A repeated below for ease of reference:

"2" - Location

As shown on the three attached foolscap drawings 7131/1/W1-W3 the ski field car parks are located under Lake Alta, altitude 5,950 ft and Double Cone 7,688 ft at grid reference S132/686685, altitude 4,900 ft.

The proposed road starts from State Highway No.6 approximately 7 miles from Queenstown and 3 miles from Frankton junction at an approximate altitude of 1,075 ft, though the point at which the road leaves Highway 6 has yet to be finalised. From here the route moves East, North, East again and finally South, a total distance of some 8 miles to the car park area, traversing two properties.

"4" - Terrain

The road crosses heavy broken morrain to approximately the 2 mile 50 chain mark where the rock face becomes exposed on steep sides just above the "polish" line of early glaciers. This relatively constant, not too broken country, continues to the 4 mile 40 chain mark. From here, large boulders* deposited by receding glaciers etc. make the going difficult and awkward until "Big Rock" is reached at 5 mile 70 chain. (* It was later concluded that these boulders were the debris from rock slides above). From here there is a relatively deep mantle of fine more withered deposited material at easier side slopes between 1:3 and 1:5 occurring over the red route to the 7 mile 15 chain mark. (The lower yellow route terrain over the section is a mixture of conditions described for 4 mile 40 chain to 7 mile 15 chain). From here the yellow route mounts a rock slide, a deep water fall, and crosses Rastus Burn, but generally side slopes are easy over this section.

Ground cover is generally tussock and other native mountain plants such as Spear Grass. Over the lower two miles patches of scrub occur. The land is used for grazing.

Geologically, the first 2¾ miles of road passes through outwash gravels, till the moranic deposits and the fan talus generally deposited by the Hawea Glacial advance during the last glaciation. From here the base rock described as Chlorite Subzone 4, coursley foliated Schist, then Chlorite Subzone 3, finely foliate Schist, are passed through. Both these belong to the Haast Schist Group of the Permion age. These are bedded with a dip to the South of approximately 20°, the horizontal line between the bedding planes running East to West. This will lead to better stability of the section of road two miles 60 chain to 4 miles 70 chain where side slopes of between 1:2½ and 1:1¾ to the North occur. From the 6 mile mark the thin mantle of glaciel deposits and the easier side slopes will make the road construction easier.

The project's influence on the environment will be limited in the terms of aesthetics, pollution, destruction of vegetation, alteration to topography and drainage.

SPECIAL FEATURES

The proposed ski field area is botanically and ecologically very interesting although there are no known unique or special features which will be adversely influenced and the effect on geology, soils water quality, climate, hydrology and other relevant physical characteristics will be minimal.

Some Alpine plants with a predominently western distribution reach their Eastern limits on the Remarkables occur in the area of the proposed development, e.g. Parahebe birleyi, Acipthylla similis, Anisotone pilifera, Ranuculus buchananrii, but these will not be endangered. An undescribed species of Alpine Scab weed also occurs in the basin but is also present on other parts of the Remarkables as well as on four other ranges in Central Otago. Probably of greatest ecological interest in the area is the high altitude Slim Snow Tussock (Chronochloa macra) with some of the highest plants being close to the top of the proposed No. 2 lift. However, great care will be taken not to eliminate these.

HUMAN ENVIRONMENT

The area is used for very limited grazing and at present there is very little human use other than some tramping and climbing in the area. Hence there are no community patterns, man made facilities or activities that can be influenced. The influence on Queenstown community will, in essence, be an increase compatible with present day holiday orientated activities. We have included further detail under the heading of "Social Impact".

Impact on the Environment

Firstly we deal with four main physical aspects impacting the environment:

THE ROAD.

As noted in Appendix A, the initial roading requirements are limited to 14 ft wide formation for Landrover and truck access for construction work on the ski field. However, great care has been taken and further surveys will be made before construction begins to ensure that the initial access track alignment is suitable for the final two-lane access road, hence no unnecessary scaring will result. Maximum grades will be 1:8, though the majority of the road will be at flatter grades. Eventually, it is intended that the running surface will be sealed and the fill embankments will be revegetated by initial sowing grass to act as a nursery for native tussock and shrubs.

Where it is impossible to form a fill embankment, spoil will be removed to other areas and covered with material capable of supporting vegetation. The road to the 4 mile 30 chain mark will appear as a thin line across the lower slopes of the Northern shoulder of the Remarkables from Queenstown. Further up it will only be visible from Arrowtown over a distance of some 10 miles through binoculars. The maximum cut is expected to the order of 20 ft with a cross gradient of 1½ : 1. Cross gradients of this steepness occur only in a few places that are of limited length. The majority of cross gradients on the existing hillside is 2 : 1 or flatter and the hight of about 11 ft or less. Attached under Appendix A is a Drawing 7131/1/W4, showing the relationships of batter to side slopes. The total length of two way highway is 5 mile 50 chain to the lower car parks at 4,000 ft altitude. Should access by road from this point to the proposed car parks at 7 mile 70 chain at 4,900 ft prove feasible, the road over the section will involve much less cutting as the side slopes are flatter and also the bulk of the formation will be an over-burden, rather than through bedrock. The total environmental impact of this section of 30 ft 0" wide formation would be little different from that of an access chairlift. Such a lift would necessarily require access tracks for four-wheeled drive vehicles to each of the pylons as branches from the initial access track between 5 mile 50 chain and 7 mile 70 chain shown on the drawings 7131/1/W3.

2. SKI FIELD AMENITIES

As mentioned under 'Ski Field Facilities' there will be three ski lifts with access tracks to the pylons. The exact location of the lifts has yet to be determined. The impact on the environment will be in the immediate vicinity, the ground being covered with snow for the last portion of the year.

It is proposed that there will be accommodation for staff only in the facilities area and that this will be based on the lines of similar projects. The supply of water will be taken from the Rastus Burn and a limited amount of sewerage disposed of by Septic tanks and ground filters. As mentioned under "Ski Field Facilities", it is proposed that the buildings be constructed as to blend in design and materials with the environment, with each other and with the general purpose of the scheme. (See Appendix P).

3. POWER & TELEPHONE LINES

It is proposed that the power will be supplied from the 11,000 volt line at a point near the confluence of Rastus Burne and the Kawerau River. The Power Board will be asked to take care to keep the poles below the skyline on the North Eastern flank of the Remarkables as indicated on Drawings 7131/1/W1 & W3 included in Appendix A. From below, the lower car parks from 3,000 ft, the power will be laid underground to 4,000 ft where it will run alongside the road and hence have no impact on the visual or any other aspect of the environment apart from the initial small trench. It is probable that the necessary poles will be put in by helicopter and hence there will be no need to cut a bulldozer track, at least on the steeper higher and more visible slopes up to 3,000 ft altitude. The final route of the aerial power lines will be agreed after further consultation with the Nature Conservation Council.

Telephone lines will be put underground in a similar way.

4. GENERAL

It is not expected that the following facets of the environment will be effected to any significant degree; water or catchment, natural resources, the ecosystems in the area, any plant or animal species, areas of structures of historical or archaeological importance, pollution problems, air quality, noise etc.

The above 1 - 4, cover the general, visual and physical effects of the environment. Below we give our assessment of the social effects:

SOCIAL IMPACT

The Social Impact on the local population will not be of any deep or great consequence. The Queenstown's tourist trade is primarily based on the Summer season and the accommodation is mainly built to cater for this traffic. The Winter traffic of skiers is complimentary to the Summer trade and a survey of occupancy figures in the Winter months show that when the Remarkables ski field is developed, the hoteliers will be able to look forward to a much greater and more satisfactory return on their invested funds, which certainly is not the case at the present time. The development of the Remarkables ski field would not encourage anyone to build hotels, motels or any other type of accommodation in Queenstown for the skiing season alone. Any decision to build additional accommodation would be based on the anticipated requirements of the Summer tourist traffic. (See Appendix Q, R & S). There will be a tendency for further growth of private accommodation in the Frankton area as compared with Queenstown itself. In all, the social effect of the new ski field, where there is such an activity in the area already, should make little difference to the social, cultural and educational characteristics or requirements of residents or visiting community.

LAND USE

The project is within the area covered by the Queenstown Borough and Lake County Councils combined operative district scheme. The land required for the project is located within a rural zone and a Crown Land Pastoral Lease and not on any designated open space reserve or domain. Approval is required for recreation as a conditional use, and accordingly an application will be made to the appropriate authorities.

BENEFITS

The prime purpose of the project is to increase the use of recreational resources of the area and here the social impact will be for the benefit of visitors and residents alike. This includes the projected increase in population of the Cromwell district.

From information available in the upper Clutha Valley Environmental Impact Report, there will be an increase in population upwards of 3,500 persons for a 15 to 20 years period. The advantage of a major ski field close to this township will be significant.

Added to Coronet Peak, the scheme will provide a choice of venue for skiing and sightseeing. The year round views from the ridge of the Remarkables will increase the world wide appeal of the Queenstown area.

EMPLOYMENT.

The project will directly create permanent positions for 6 - 9 people for the year round and an additional 50 seasonal positions at the ski field alone.

Most of the employment generated in the area is either directly or indirectly related to tourism. Currently nearly 37% of Queenstown's full time work force is employed in restaurant and accommodation establishments, compared with 3% for New Zealand as a whole and 44% of the town's part time employment is also generated by this sector.

The project will not alter those percentages in any great way but will improve the balance of numbers employed in the district throughout the year.

Safeguards

i) The road will be constructed to the standards laid down in Appendix A and particular attention will be paid to drainage. The four batters of the two-lane road will be sown with grass where possible or sprayed with an emultion containing grass seed, which will act as a seed bed for the re-establishment of the natural flora.

ii) The road will be maintained on a regular basis and any slips or washouts will be dealt with immediately. Culverts will be inspected regularly. The Company intends to purchase maintenance and snow clearing equipment necessary to keep the road clear at all times; properly drained and maintained.

iii) There will be no access by the public in the initial stages when the access track has been formed. Later, when the permanent road has been established, access for cars will be restricted to avoid congestion if and when necessary to reduce danger on the road. Buses will be the main form of transport to and from the terminal areas.

iv) All rubbish will be disposed of outside the area at an established public dumping ground near Queenstown. The public will be informed of the Company's determination to keep the area clear of bottles, tins etc. Also, to this end, the Company intends to control the form of containers used for pre-packaged food and drink sold at the terminal area. The Company will take responsibility for regular clean ups "of such rubbish".

v) The Company will engage a suitably qualified person as a Ranger to assist and guide public in the proper use and appreciation of the area, and for the formation and maintenance of tracks, and similar duties. The National Parks Authority has agreed to assist with the training of such a Ranger.

vi) The development will be planned in all aspects to the standards and requirements of the Department of Lands and Survey, the Regional Water Board, the Catchment Board and local Planning Authority.

vii) The traffic generated when the project is functioning would be similar to that already created by the Coronet Peak Ski Field. Adequate car parking has been planned and will be supplemented by a fleet of buses.

viii) The Company have sufficient resources to ensure the completion of the project to the required standards and maintenance of the same in the long term.
viiii) It is the Company's policy to continue with landscaping and maintenance of the works over a long period until the whole of the project is secure and completely blended with the environment. Thereafter only maintenance will be required.
vv) All civil engineering and roading works will be supervised by the firm of Frederick Sheppard and Partners, Registered Engineers who prepared the documents presented in Appendix A and who have gained considerable experience on roading works in high country. They are at present supervising construction of several similar roads for the New Zealand Broadcasting Corporation in the Central Otago area and have completed similar works throughout the country.

Conclusion

Economically, the impact of the project will be quite considerable upon the working and business community in Queenstown and, to a lesser degree, in all other towns in the area. Physically, the impact will be limited as will the effect on the plant and animal life. Social effects will not be great. The greater utilization of facilities will mean less disturbance to the country's environment in the long term than if a completely new ski field were to be established in an area not already catering for such a recreation.

The additional recreational facilities will greatly enhance the attractiveness of the area to residents and visitors from both within the country and overseas. The ability to reach and enjoy the environment will be enhanced.

To minimise the adverse effects, which are almost entirely visual, the road has been kept out of view wherever physically possible from centres of population and for long periods of the year will not be seen if snow is windrowed on the fill side. The ski field is at a considerable distance from the Kawerau Valley and is perched so that it cannot be seen, except from the distant Arrowtown area where the line of sight is approximately 10 miles. In addition, careful control of construction at all stages will ensure that any

erosion will be immediately made good and the planting and landscaping of these areas will be a continuing process.

Little other effect will be noticed on the scenic features of this area, and by providing off season sightseeing another visual aspect of the Wakatipu area, will be made available to thousands of New Zealand and overseas visitors.

When consideration is given to the extending of ski field into Doolans Stream and the possible daily movement in excess of 10,000 people by 1990, the construction of a road is the only practical solution to the transport requirements of the future.

Consultations

The following individuals, agencies or groups, have been consulted for their expert views, advice, opinions, or for agreement to the scheme.

1. Commissioner for Crown Land, Dunedin
2. Lake County Council
3. Borough of Queenstown
4. Otago Catchment Board
5. The Federated Mountain Clubs of New Zealand (Inc.)
6. The New Zealand Conference on the Environment & Conservation (Co En Co).
7. Wakatipu Environmental Society
8. Associate Professor A. F. Mark, Botany Department University of Otago
9. Royal Forest & Bird Protection Society of New Zealand Inc.
10. Nature Conservation Council, Wellington -
11. Ron Sargeant, New Zealand National Ski Team Coach
12. New Zealand Historic Places Trust
13. The New Zealand Ski Association Inc.
14. Central Otago Power Board
15. The late A. A. Hood - Registered Surveyor of Queenstown
16. Mr L. Heron, Land owner adjacent to Highway 6.
17. Mr Kennedy, Cone Peak Station - Run holder
18. Frederick Sheppard & Partners, Consulting Engineers, Commission for the Environment, Wellington
19. Mr T. Ibbetson, B. Arch (Hons), A.N.Z.I.A., A.R.I.B.A.
20. C. W. F. Hamilton & Co. Ltd. Christchurch
21. Vacation Hotels Limited, Auckland
22. Trans Hotel (NZ) limited, Christchurch
23. Travelodge (NZ) Limited, Auckland
24. Professor G. A. Knox, Professor of Zoology and Director Environmental Defence Society, Canterbury University, Christchurch.

References

The following references are attached and some have been referred to in the text of this report. Note, actual figures for the estimates and expenditure have been deleted from appendices A & B but can be made available to responsible bodies if so desired.

a) Appendix A.

Proposed Remarkables Ski Field roading report dated January 1974 prepared by Frederick Sheppard & Partners. Includes Drawings 7131/1/W1 - W4.

b) Appendix B.

Capital Expenditure Programme dated December 1975, prepared by the Mount Cook & Southern Lakes Tourist Co. Ltd.

c) Appendix C.

Letter from Lake County Council dated 10th June 1974.

d) Appendix D.

Letter from Borough of Queenstown dated 23rd July 1974.

e) Appendix E.

Report from the Otago Catchment Board on Classification of Land etc. dated 25th July 1974.

f) Appendix F.

Letter from the Federated Mountain Clubs of NZ Inc. dated 26th July 1974.

g) Appendix G.

Covering letter for Appendix F from the New Zealand Conference on the Environment and Conservation (Co En Co)

h) Appendix H.

Letter from the Wakatipu Environmental Society dated 29th July 1974.

i) Appendix I.

Letter from Associate Professor A. F. Mark, Botany Department, University of Otago, dated 12th August 1974.

j) Appendix J.

Letter from the Royal Forest and Bird Protection Society of NZ Inc. dated 22nd August 1974.

k) Appendix K.

Letter from Nature Conservation Council dated 26th August 1974.

l) Appendix L.

Letter from Mr Ron Sergeant, New Zealand National Ski Team Coach, dated 26th August 1974.

m) Appendix M.

Letter from New Zealand Historic Places Trust dated 2nd September 1974.

n) Appendix N.

Letter from New Zealand Ski Association Inc. dated 4th September 1974.

o) Appendix O.

Letters from C. W. F. Hamilton dated 20th October & 28th November 1975.

p) Appendix P.

Architect's impression of base facilities

q) Appendix Q.

Letter from Vacation Hotels Limited dated 26th September 1975.

r) Appendix R.

Letter from Trans Hotel Limited dated 16th October 1975.

s) Appendix S.

Letter from Travelodge Hotel Limited dated 30th September 1975.

t) Appendix T.

Letter from Professor Knox, Professor of Zoology, Canterbury University, dated 29th July 1974.

Responsibility for Report.

This report has been prepared by the Mount Cook & Southern Lakes Tourist Co. Ltd. in conjunction with Frederick Sheppard and Partners, Consulting Engineers, Wellington.

R. R. Forward
Assistant General Manager : Land
The Mount Cook & Southern Lakes Tourist Co. Ltd.
Private Bag, Christchurch.

10th December 1975.

FREDERICK SHEPPARD AND PARTNERS
- CONSULTING ENGINEERS

Appendix "A"

AUCKLAND
BOX [illegible] TELEPHONE 360-464

WELLINGTON
BOX 9044 TELEPHONE xxxxx 43-499

CHRISTCHURCH
BOX 2632 TELEPHONE 60-468

F. J. SHEPPARD B.E., M.N.Z.I.E., M.I.C.E., A.M.I.E. (AUST.)
M. J. GRANT B.E., M.N.Z.I.E.

I. D. STEWART B.E., M.N.Z.I.E.

WELLINGTON

January 1974

As amended and sent to Otago Catchment Board
30.5.74 - see letter

MT COOK AND SOUTHERN LAKES TOURIST CO. LTD
PROPOSED REMARKABLES SKI-FIELD
ROADING REPORT

1. INTRODUCTION

On 15th November 1973 Mr R.R. Forward contacted this office regarding a feasibility survey for a road to a proposed ski-field in the Remarkables. It was arranged for a field survey to take place the following weekend, 16th, 17th and 18th November 1973. A letter dated 22nd November 1973 to Mr Forward confirms the arrangement and also discusses the question of the environmental impact of the project.

A further letter dated 14th December 1973 enclosing drawings 7131-1/W1 - W3 gives a definition of the route for legal and access right purposes. It is understood that these rights have been obtained but no details have been made available.

2. LOCATION

As shown on the 3 attached foolscap drawings 7131-1/W1 - W3, the ski-field car parks are located under Lake Alta, altitude 5,950 feet, and Double Cone 7,688 feet, at grid reference S132/686685 altitude 4,900 feet.

The proposed road starts from State Highway No. 6, approximately 7 miles from Queenstown and 3 miles from Frankton Junction at an altitude of 1,075 feet, and moves east, north, east again and finally south, a total distance of some 8 miles to the car park area traversing two properties.

3. SURVEY

A survey was made over 3 days after observance of aerial photographs in Wellington and use of NZMS 1:S132, upon which a possible route at grade 1 : 10 was plotted:-

Friday, 16th November 1973. 2 miles 50 chain to 3 miles 63 chain

Mr Forward, and Mr Stewart of this firm, arrived in Queenstown at 4.00 p.m. and proceeded with Mr Robinson via Land-Rover to the 2 mile 50 chain mark following an existing track indicated with sparse dots on plan 7131-1/W3. The party then moved around to the 3 mile 63 chain mark and back to the Land-Rover, taking observations. No insurmountable problems were discovered. This portion was not flagged as a "security" measure. Returned to Queenstown at 8.30 p.m.

Saturday, 17th November 1973. 3 miles 36 chain to 7 miles 70 chain
2 miles 50 chain to 0 miles 00 chain

Party Forward, Robinson and Stewart, flew in by helicopter to 3 miles 63 chain mark at 6.30 a.m. and started flagging yellow ("low") route to car park, arriving there at 12.30 p.m. Robinson and Stewart returned to 2 miles 50 chain mark by helicopter at 1.30 p.m. and flagged yellow and red route out to boundary fence at 1 mile 25 chain. Forward returned to airport and brought Land-Rover out to meet Stewart and Robinson at 3.00 p.m. Forward returned to Christchurch later that day.

Sunday, 18th November 1973. Improvements and Air - Ground Markers
4 miles 10 chain to 7 miles 70 chain

Party Robinson and Stewart flew into the car park area, 7 miles 70 chain, at 6.30 a.m. and proceeded to put in ground markers (visible from the air) and improve the yellow route. The party flew out from the 4 miles 10 chain mark at noon and Stewart returned to Wellington at 2.00 p.m. Further work of this nature will be required but will not affect the basic route followed.

The legal descriptions of the land passed through are:

* (a)	0m.00ch. to 1m.25ch.	Sections 31 and 32 in Block 12 Conburn Survey District Lake County
(b)	1m.25ch. to 7m.45ch.	Cone Peak Run 345C Block 2 Coneburn Survey District Lake County
(c)	7m.45ch. to end	Cone Peak Run 345C Block 10 Kawarau Survey District Lake County

I understand (a) belongs to the one owner and (b) and (c) are leased by the Crown to the same runholder. Refer also to our letter to Mr Forward dated 4th December 1973.

4. TERRAIN

The road crosses heavy broken moraine to approximately the 2 miles 50 chain mark where the base rock becomes exposed on steep sides just above the "polish" line of early glaciers. This relatively constant not too broken country continues to the 4 mile 40 chain mark. From here, large boulders deposited by receding glaciers etc. make the going difficult and awkward until "Big Rock" is reached at [illegible] miles 70 chain. From here there is a relatively deep mantle of finer more weathered deposited material at easier side slopes between 1 : 3 and 1 : 5 occurring over the red route to the 7 miles 15 chain mark. (The lower yellow route terrain over this section is a mixture of conditions described for 4 miles 40 chain to 7 miles 15 chain). From here the yellow route surmounts a rock slide, a deep waterfall, and crosses Rastus Burn, but generally side slopes are easy over this section.

* It has subsequently been decided to investigate alternative approaches from further south along Highway 6, possibly using a portion of the existing road to a gravel pit.

Saturday, 17th November 1973. 3 miles 36 chain to 7 miles 70 chain
2 miles 50 chain to 0 miles 00 chain

Party Forward, Robinson and Stewart, flew in by helicopter to 3 miles 63 chain mark at 6.30 a.m. and started flagging yellow ("low") route to car park, arriving there at 12.30 p.m. Robinson and Stewart returned to 2 miles 50 chain mark by helicopter at 1.30 p.m. and flagged yellow and red route out to boundary fence at 1 mile 25 chain. Forward returned to airport and brought Land-Rover out to meet Stewart and Robinson at 3.00 p.m. Forward returned to Christchurch later that day.

Sunday, 18th November 1973. Improvements and Air - Ground Markers
4 miles 10 chain to 7 miles 70 chain

Party Robinson and Stewart flew into the car park area, 7 miles 70 chain, at 6.30 a.m. and proceeded to put in ground markers (visible from the air) and improve the yellow route. The party flew out from the 4 miles 10 chain mark at noon and Stewart returned to Wellington at 2.00 p.m. Further work of this nature will be required but will not affect the basic route followed.

The legal descriptions of the land passed through are:

* (a)	Om.00ch. to 1m.25ch.	Sections 31 and 32 in Block 12 Conburn Survey District Lake County
(b)	1m.25ch. to 7m.45ch.	Cone Peak Run 345C Block 2 Coneburn Survey District Lake County
(c)	7m.45ch. to end	Cone Peak Run 345C Block 10 Kawarau Survey District Lake County

I understand (a) belongs to the one owner and (b) and (c) are leased by the Crown to the same runholder. Refer also to our letter to Mr Forward dated 4th December 1973.

4. TERRAIN

The road crosses heavy broken moraine to approximately the 2 miles 50 chain mark where the base rock becomes exposed on steep sides just above the "polish" line of early glaciers. This relatively constant not too broken country continues to the 4 mile 40 chain mark. From here, large boulders deposited by receding glaciers etc. make the going difficult and awkward until "Big Rock" is reached at 5 miles 70 chain. From here there is a relatively deep mantle of finer more weathered deposited material at easier side slopes between 1 : 3 and 1 : 5 occurring over the red route to the 7 miles 15 chain mark. (The lower yellow route terrain over this section is a mixture of conditions described for 4 miles 40 chain to 7 miles 15 chain). From here the yellow route surmounts a rock slide, a deep waterfall, and crosses Rastus Burn, but generally side slopes are easy over this section.

* It has subsequently been decided to investigate alternative approaches from further south along Highway 6, possibly using a portion of the existing road to a gravel pit.

4. TERRAIN (continued)

Ground cover is generally tussock and other native mountain plants such as spear-grass. Over the lower 2 miles patches of minor scrub occur. The land is used for grazing.

Geologically, the first 2¾ miles of road passes through outwash gravels, till and morainic deposits and fan talus generally deposited by the Hawea Glacial advance during the last glaciation. From here the base rock described as Chlorite Subzone 4, coarsely foliated schist, then Chlorite Subzone 3, finely foliated schist, are passed through. Both these belong to the Haast Schist Group of the Permion age. These are bedded with a dip to the scuth of approximately 20°, the horizontal line between the bedding planes running east to west. This will lead to better stability of the section of road 2 miles 60 chain to 4 miles 70 chain where side slopes of between 1 : 2½ and 1 : 1¼ to the north occur. From the 6 mile mark the thin mantle of glacial deposits and easier side slopes will make road construction easier.

5. ROAD ALIGNMENT

The route described below is indicated approximately on drawing 7131-1/W3, and where flagged, as indicated by the yellow, red or green crayons, has been put in at grades of between 1 in 8 and 1 in 10. When construction takes place this may be locally steepened to 1 in 7 for short stretches. The proposed road will start at the Main Highway No. 6 and swings across flat land to the right of the end of a minor ravine at 0 miles 30 chain. From here the route climbs a broad easy face and then zig-zags up to the boundary fenceline which runs north and south at 1 mile 25 chain. The length between the corners of the zig-zag is limited on the left by a new boundary fence and minor ravine; and on the right by a very steep ravine. From the boundary fence to the crossing of the next ravine at 2 miles 20 chain (flagged red), the terrain is broken into a series of long hummocks, and a relatively straight alignment at a grade of 1 in 9 was marked out, "skipping" across these rises. This may be improved to 1 in 10 by striking a slightly different line.

From the ravine to the prominent knob at 2 miles 50 chain, the road more or less follows the existing track with grade improvements, which have been flagged in yellow. At 2 miles 50 chain the route makes an easy curve, winding up to an altitude of 2,500 feet more or less at 2 miles 60 chain. From this point right around to the 4 miles 70 chain mark the road will have to be cut in base rock, apart from several short sections between boulders. The route is flagged yellow from the 4 miles 63 chain point. Minor deviations and short changes in grade could avoid minor obstacles. The route just manages to clear the heads of two major and several minor ravines over this section. From the 4 miles 70 chain mark the road again turns back upon itself in an easy curve and zig-zags over to "Big Rock" at the 5 miles 70 chain mark. This mile of road is the most difficult and it is thought worthwhile to spend considerably more time surveying and improving the yellow flagged route. At 5 miles 25 chain an especially expensive hairpin bend over the cliffs will need to be formed. From "Big Rock"

5. ROAD ALIGNMENT (continued)

the road moves back on itself again to a corner at 6 miles 10 chain (flagged white), altitude 4,500 feet. From here to the 7 miles 10 chain mark (flagged red) the side slopes are considerably easier and the road will be formed in shallow deposits of moraine, possibly with a small 'dozer. This section rises to the 5,000 ft mark at 6 miles 70 chain and then drops back down to join the yellow route at the 7 miles 10 chain mark, altitude 4,850 ft, which then heads across through a rocky slide and above a waterfall at grades of 1 in 10, up and down, to a proposed culvert at 7 miles 40 chain, altitude 4,800 feet. On either side of this stream crossing there are areas for car parks. The road carries on across and up the flat area at a grade of 1 in 10 to a large rock (end of yellow flags) at 7 miles 70 chain directly opposite a straight, high valley to the left (East). Beyond here the route has been surveyed. We understand that this can be left until ski-tows etc. are located. There appears to be no real physical difficulty.

The final road alignment will be within a chain or two of the flagged route, apart from the unsurveyed sections from the boundary fence to 1 mile 25 chain and the difficult section from 4 miles 70 chain to 5 miles 70 chain ("Big Rock"). The first section to the boundary fence should present no problems, but the second section referred to will require a lot of survey work and extra care during construction.

6. ALTERNATIVE ROUTES (REFER LETTER FROM FREDERICK SHEPPARD & PARTNERS APPENDIX A/1)

There is no really alternative route, speaking in general terms, and the different routes shown on the plan are in fact only minor deviations and improvements to the originally flagged yellow route.

7. OTHER INTERESTED PARTIES

It is understood that your firm will have the primary interest in the road, and it is not known whether any other firms or local bodies would be interested in making any financial contribution towards the road construction.

8. PROGRAMME

It is understood that no construction will be started until next summer, and that the intervening time will be used to clear the project with public bodies, including the Council for the Environment.

Initially, a track 14 ft wide will be required generally following the proposed final route, but the standard of the track surface need only be suitable for Land-Rovers to make observations of the snowfield the following winter. The later development of the road to a two-lane highway suitable for access by buses is to be carried out over a period of several years as a series of upgrading exercises, the timing being dictated by usage and finance.

9. CONSTRUCTION PROGRAMME

Confining the discussion to the construction of the Land-Rover access track, it is understood that you are interested in carrying out as much of this work as possible yourselves by using your small D4 'dozer from Coronet Peak and buying or hiring a larger machine. It is considered that you would require at least a D8 'dozer, and even then considerable portions of the route will require blasting etc., using a compressor and air tools. We would recommend the following course of action; it is considered that the whole of the summer would probably be needed for construction of the formation at these altitudes.

(i) Initially form whatever parts of the routes that you can with a small D4 'dozer. This work could start from the bottom in August/September of this year. It is likely that the middle section from 2 miles 50 chain to 6 miles would defeat this machine denying access to the upper section beyond 6 miles.
(Estimated time required 6 weeks).

(ii) At the same time the large 'dozer should be brought in or tenders called for construction of this middle section.
(Estimated time required 12 weeks).

(iii) Mr Robinson considers he could construct the section from 6 miles to the rock slide with the small 'dozer, but it would be necessary to have the section up to 6 miles suitable for Land-Rover access to bring up supplies etc.
(Estimated time required - 2 machines, 6 weeks).

10. STANDARDS

The minimum standards for the track are:-

(a) minimum formation width of 14 ft.

(b) formation width in cut 10 ft, fill 4 ft.

(c) side slopes of cut batters ¼ to 1 in rock, ½ to 1 in moraine

(d) the running surface need not be metalled, apart from local boggy patches etc. A final decision on metalling is probably best left until the formation work is completed. We have allowed in our estimate for 1,000 yards of imported basecourse metal but this is not enough to give a fully metalled running surface and will be used for "bridging" soft areas.

The standards for the 30'-0" formation width two-lane highway will be in accordance generally with (a) - (d) above varied for the different side slopes as shown on attached drawing 7131-1/W4.

11. ESTIMATE

The following is an estimate based on today's equipment hire rates of the cost of the formation of a track 7 miles 70 chain long to the above standards with a small allowance for metalling. We have assumed that all construction equipment and operators are on hire from others:-

1. Establishment costs etc.

2. Form 14'-0" wide track through glacial deposits
Omiles 00 chain to 2miles 60 chain
220 chain at

3. Ditto across steep slopes in rock, including blasting
2miles 60 chain to 4miles 70 chain
170 chain at

4. Ditto across ditto and between outcrops
4miles 70 chain to 5miles 70chain
80 chain at

5. Ditto hairpin bend at 5miles 25chain above cliffs
Lump sum

6. Ditto across moderate side slopes in glacial deposits with minor rock work
5miles 70 chain to 7miles 70 chain
160 chain at

7. Major culverts at 2miles 20 chain and 7miles 45chain
Lump sum

8. Minor culverts say 20 x 24 '-0" long

9. 1½" maintenance metal for wet spots only. Allowance 1,000 cubic yards at cubic yard (PROVISIONAL)

TOTAL ESTIMATE (JANUARY 1974)
TRACK FORMATION

12. FURTHER SURVEY WORK

As mentioned in earlier sections of this report, the route as flagged, as well as the unflagged sections, will require clearer definition. In such severe climatic conditions the flags used to mark the route may have already disappeared. However, there should be sufficient markers for us to re-establish the route on the ground. A marking survey should be made without delay and further improvements to the route looked at. A weekend late in February would be suitable. Sprayed paint marks can be put on the ground and rocks, as well as stakes at important points. The sections 0 miles to 1 mile 25 chains and 2 miles 50 chains to 3 miles 63 chains are not at present flagged.

13. SUPERVISION OF CONSTRUCTION

When construction is ready to start, a further survey possibly lasting a week should be undertaken and the number of markers increased to specifically define the route on the ground and then the whole route walked over and discussed with the machine operators.

During construction further problems may occur and initially fortnightly supervision visits should be made to see that the work is being carried out as planned. Most of these problems would be caused by obstructions which can be surmounted or circumvented temporarily.

It is probable that close supervision during the construction will be a prerequisite of any approval to the scheme by the Council for the Environment.

14. FURTHER REPORTS

It has been proposed to have a meeting in Wellington between Messrs Forward, Robinson, and the writer:-

(a) to discuss the project with the Commission for the Environment

(b) to discuss the preparation of an Impact Report by ourselves on your behalf

(c) to discuss the presentation of the scheme to the local population by possibly a press release or story.

(d) change of land usage and other statutory declarations may have to be made by local bodies and objections called for.

15. CONCLUSION

It is considered that it is feasible to construct a road to the proposed ski-field along the route shown. The standard of the finished track can be varied to suit a budget, any additional work beyond the minimum requirements being of permanent benefit.

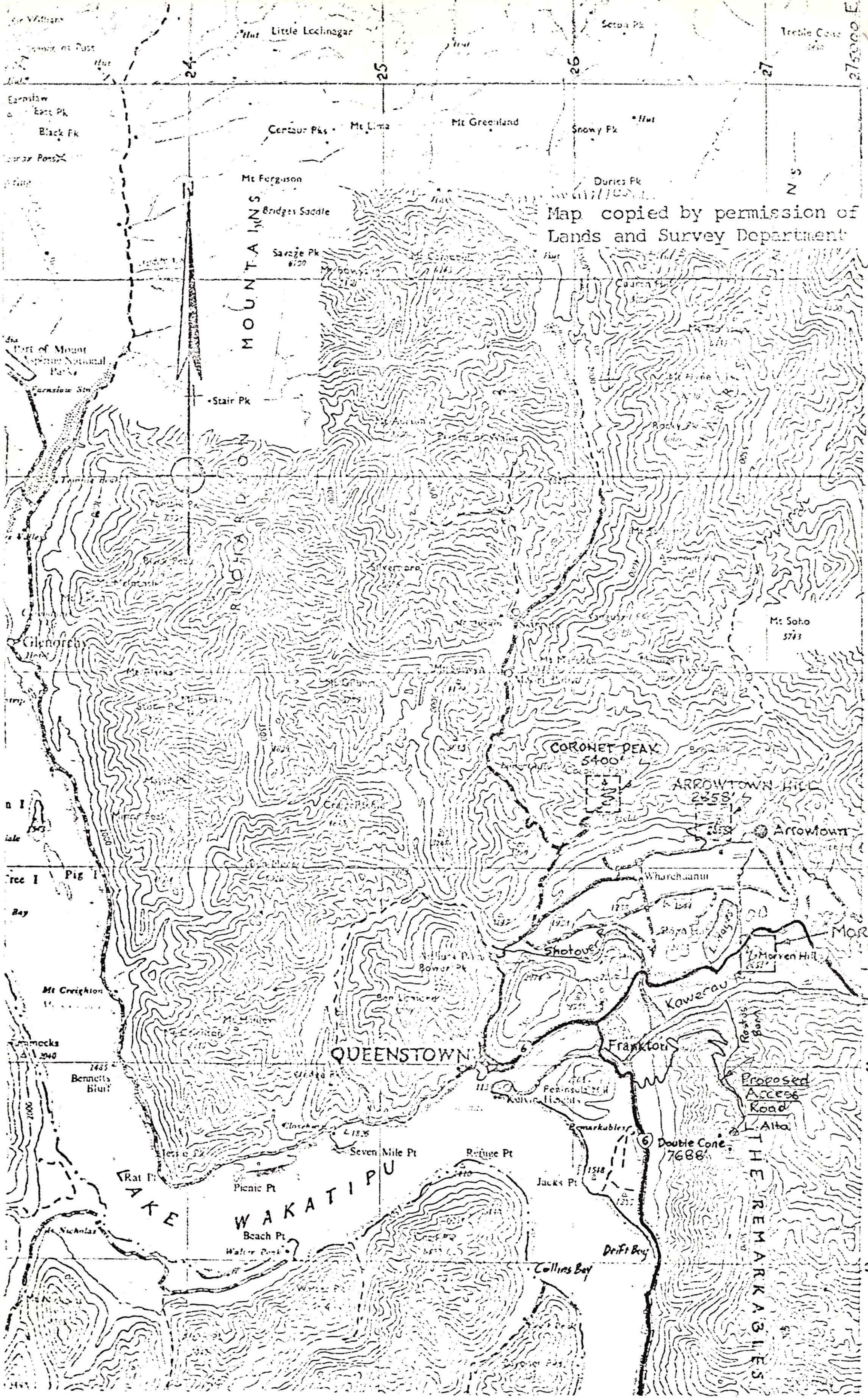
---

15. CONCLUSION (continued)

The cost of constructing 8 miles of 30 ft formation width two-lane metalled highway will be in the vicinity of , in addition to the initial track cost. Here, too, the standards may be varied according to the budget or the availability of funds and sufficient access be attained to the ski-field to satisfy the demand for a lesser amount. It should also be noted that both estimates are based on present rates, which under present fuel supply conditions will escalate rapidly.

I.D. STEWART B.E., M.N.Z.I.E.
Registered Engineer

31 January 1974



Map copied by permission of Lands and Survey Department

PROPOSED ACCESS ROAD for Mt COOK TOURIST CO. LTD
LOCALITY PLAN

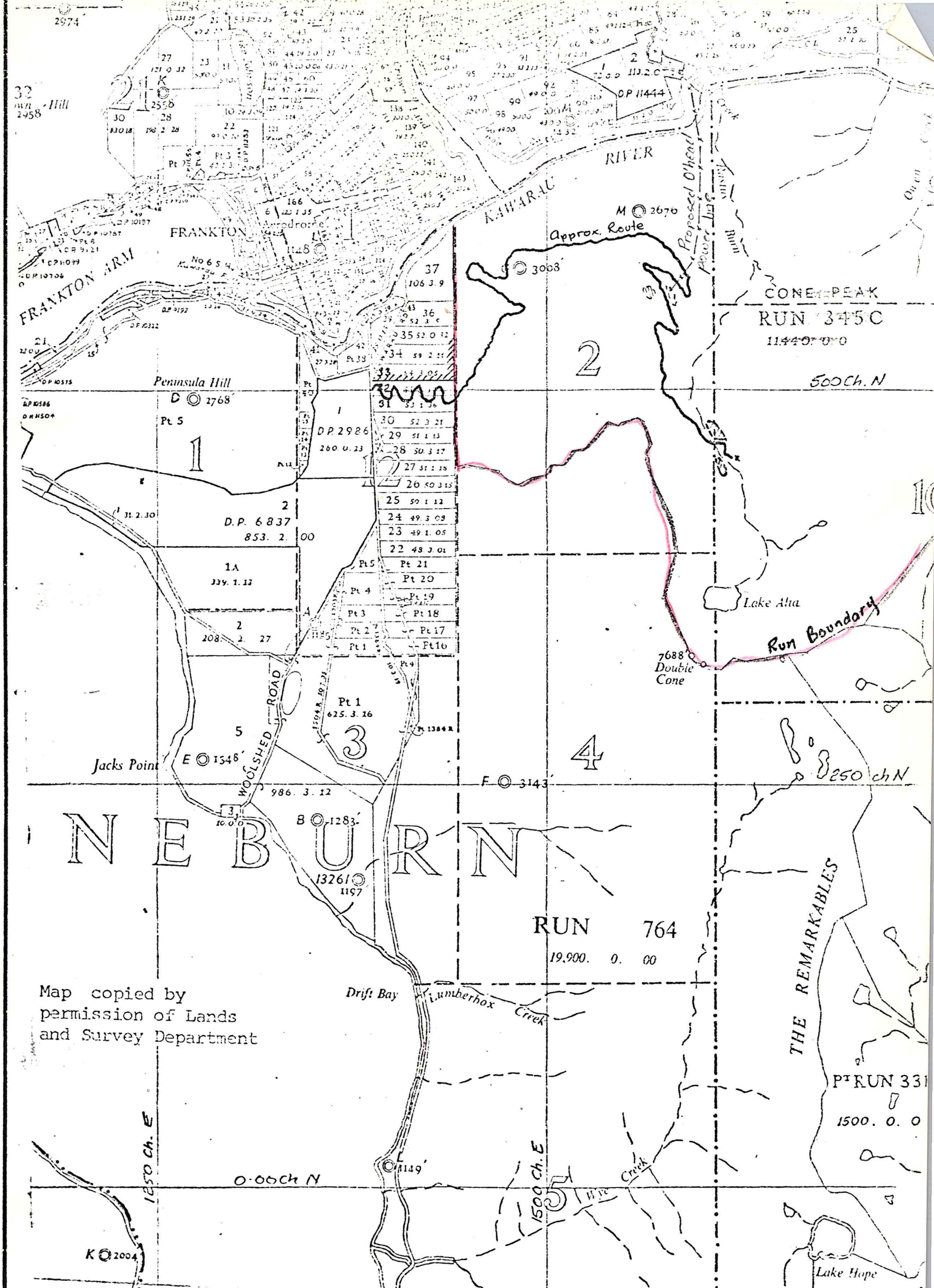
THIS DRAWING IS COPYRIGHT BY

FREDERICK SHEPPARD AND PARTNERS
CONSULTING ENGINEERS

AUCKLAND WELLINGTON CHRISTCHURCH

SCALE	1" = 4M
DRAWN	1.O.S.
APPRVD.	IES.
DATE	Nov. '73.

7131-1/W1



Map copied by
permission of Lands
and Survey Department

Rev. A. Added Power Route. May '74

PROPOSED ACCESS ROAD for Mt COOK TOURIST CO. LTD
BOUNDARIES ETC.

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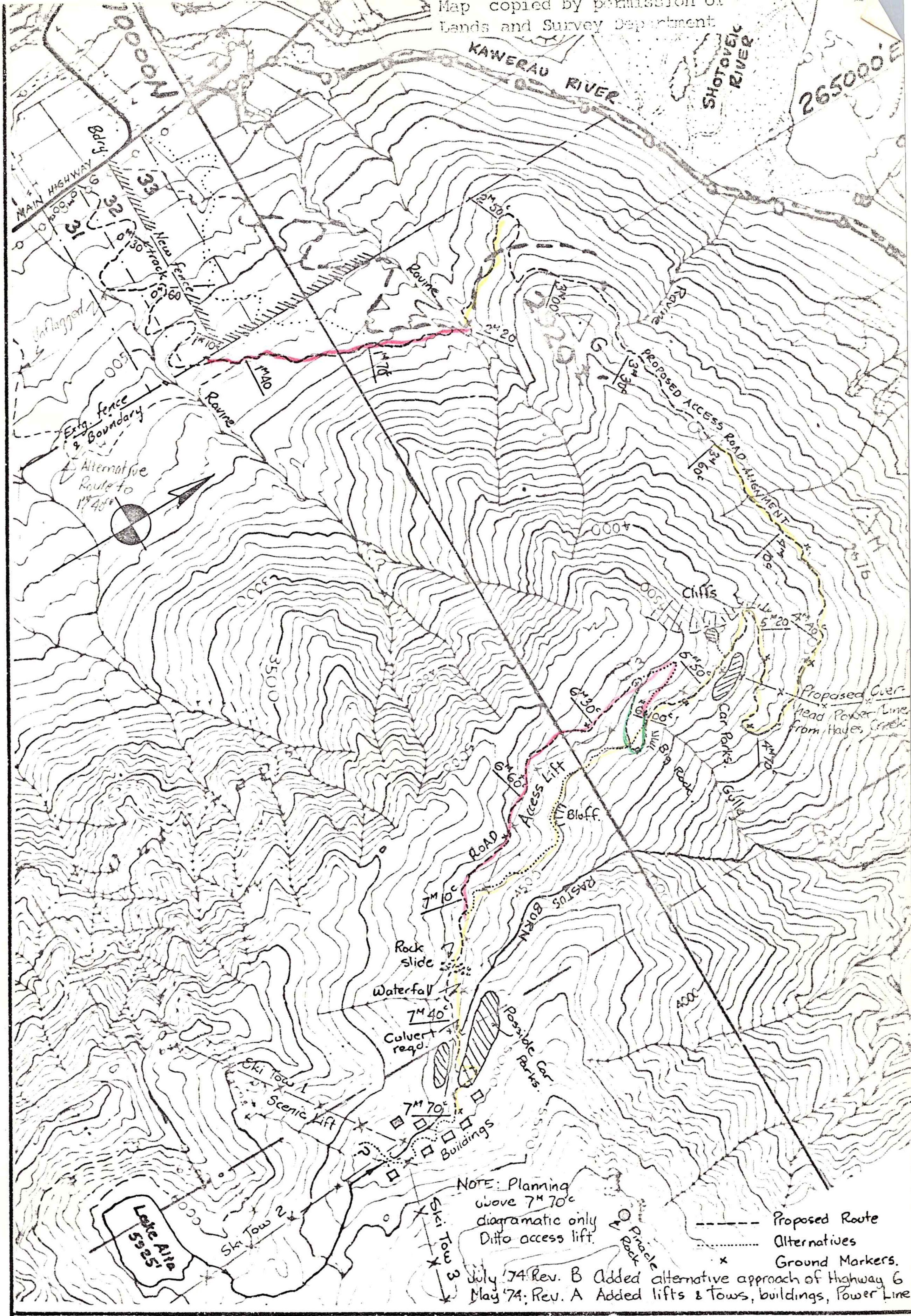
CONSULTING ENGINEERS

AUCKLAND WELLINGTON CHRISTCHURCH

SCALE	1" = 1M
DRAWN	I.D.S
APPRVD.	
DATE	Nov. '73

7131-1/W2

Map copied by permission of Lands and Survey Department



NOTE: Planning above 7M 70c diagramatic only Ditto access lift.

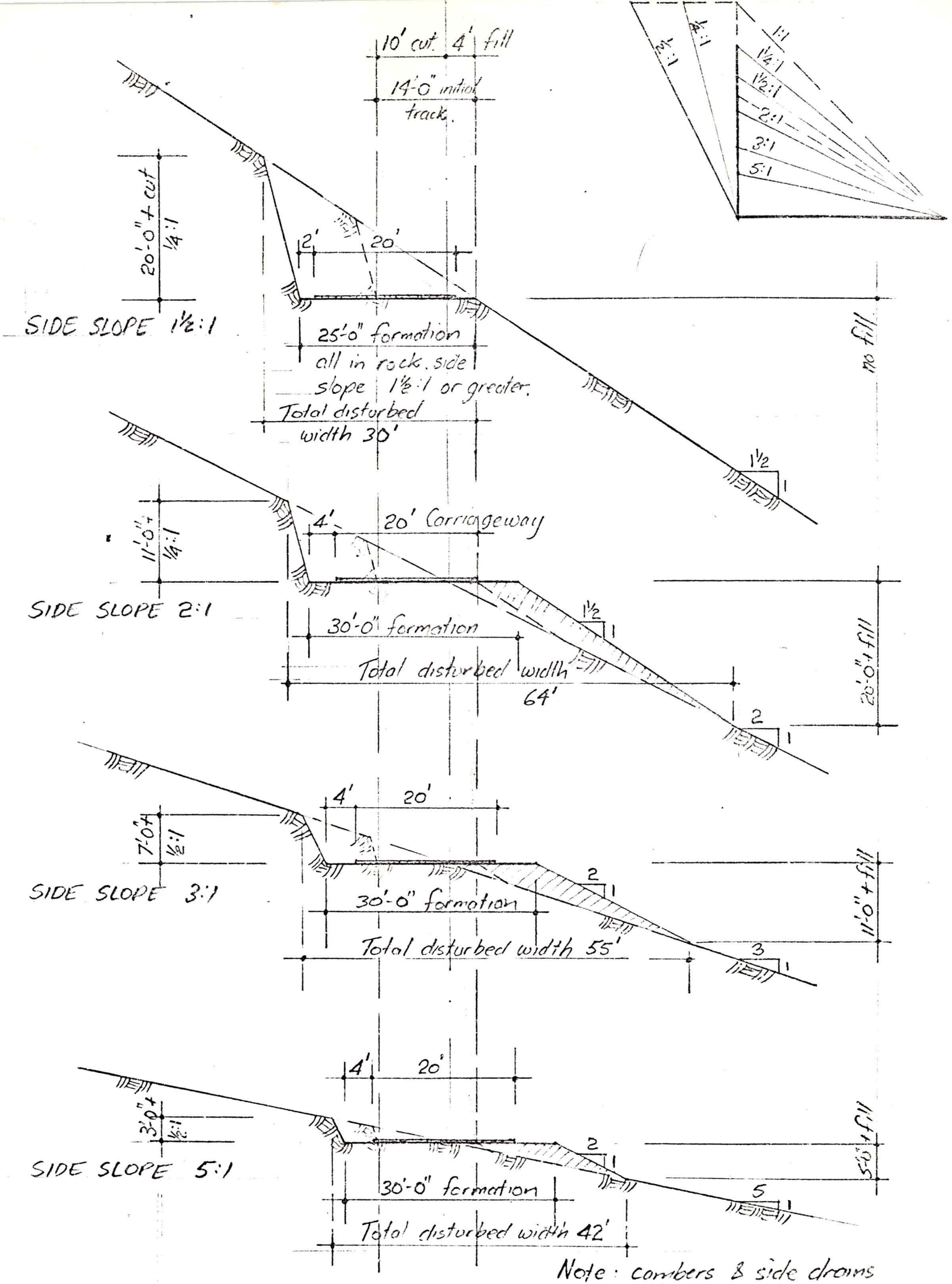
July '74 Rev. B Added alternative approach of Highway 6
May '74 Rev. A Added lifts & Tows, buildings, Power Line

PROPOSED ACCESS ROAD for Mt COOK TOURIST CO. LTD
ACCESS ROAD PLAN

THIS DRAWING IS COPYRIGHT BY
FREDERICK SHEPPARD AND PARTNERS
CONSULTING ENGINEERS
AUCKLAND WELLINGTON CHRISTCHURCH

SCALE	1" = 30CH.
DRAWN	I.D.S.
APPRVD.	I.D.S.
DATE	Nov. '73.

7131-1/W3



Note: cambers & side drains not shown.

TYPICAL SECTION FOR VARIOUS EXISTING SIDE SLOPES.
Maximum longitudinal grade 1:7. Generally 1:8 to 1:10.

PROPOSED ACCESS ROAD for Mt COOK TOURIST CO. LTD
TYPICAL ROAD SECTIONS

THIS DRAWING IS COPYRIGHT BY

FREDERICK SHEPPARD
AND PARTNERS
CONSULTING ENGINEERS

AUCKLAND WELLINGTON CHRISTCHURCH

SCALE	1" = 20'-0"
DRAWN	I.D.S.
APPRVD.	J.C.S.
DATE	May '74.

7131-1/W4

FREDERICK SHEPPARD AND PARTNERS
CONSULTING ENGINEERS

AUCKLAND
BOX 6543 TELEPHONE 360-464
WELLINGTON
BOX 12141 TELEPHONE [illegible] 725-581
CHRISTCHURCH
BOX 2632 TELEPHONE 50-468

F. J. SHEPPARD B.E., M.N.Z.I.E., M.I.C.E., A.M.I.E. (AUST.) AK
M. J. GRANT B.E., M.N.Z.I.E. AK
I. D. STEWART B.E., M.N.Z.I.E. WN
D. F. MACLENNAN B.E., M.N.Z.I.E. WN
D. M. STARK B.E., M.N.Z.I.E. AK

WELLINGTON

11 December 1975

Mr R.R. Forward,
Mount Cook and Southern Lakes Tourist Co. Ltd,
Private Bag,
CHRISTCHURCH.

Dear Sir,

PROPOSED ACCESS ROAD FOR
MOUNT COOK AND SOUTHERN LAKES TOURIST CO. LTD
ALTERNATIVE ROUTES

Refer to Paragraph 6 of Appendix "A" and Clause 2(b) "Options" of the text, both in the Environmental Impact Report dated 6th September 1974.

To reinforce our statement that the chosen route up the Rastus Burn, as shown on our drawing 7131-1/W3, is the only feasible one, we obtained the necessary aerial photographs and, using these and the Topographical 1 mile to 1 inch maps NZMS 1 series S132 and S133, produced the accompanying drawing 7131-1/W5 at scale 1 mile to 1 inch showing various alternative routes as discussed below. We have also postulated positions for the three initial ski tows. However any of these routes, it must be emphasized, should be walked over if they are to be investigated further. However we consider the statements below, general though they are in nature, will make such ground surveys unnecessary, except for further setting out of the Rastus Burn route and, of course, the ski tows.

(i) Wye Creek (North Branch)

Far too steep from altitude 1300 to 3400 feet. The less steep side slopes are above creek to the North over this section, i.e. on South side, and would result in very bad drifting of snow. (Not shown on plan 7131-1/W5).

(ii) Resta Road (near Gibston)

Refer our drawing 7131-1/W5. Nowhere can sufficient height be gained to avoid becoming "trapped" in one of the gullies below the main ridge, Mt Edward to Mt Salmond to Ben Cruachon, i.e. the gullies formed by Tom's and Camp Creeks.

In any case to get to Terminal 2 at the head of Doolan's Creek (Right Branch), which is the only sensible place from a ski-ing point of view, we would have to cross the ridge at a height of 4,500 feet somewhere between Mt Salmond and Mt Edward and this does not appear possible. We could however move along the ridge from Coal Pit Saddle - see discussion below under (iv).

(iii) Chard's Road (Owens Creek)

Could approach Cone Peak Station and Morven Ferry from the West along the South bank of the Kawarau River or from the East along Chard's Road. Have not got easy side slopes as for the Rastus Burn route up to an altitude of 2,700 feet. The basin at the head of Owen Creek faces North and is generally clear of snow. To reach Terminal 2 would require a lift to the saddle at 6,000 ft altitude North of and half a mile from the end of ski tow 3. This alternative appears to be impossible also, as again we have to rise up and drop down again to get to Terminal 2.

(iv) Coal Pit Road; Doolan's Creek via Gibbston

This route, as shown on Drawing 7131-1/W5, is the only route that can, in our opinion, be considered as an alternative to the proposed Rastus Burn road but, in comparison, it has many grave disadvantages and we list these below:-

(a) Length; we give below a table comparing times and distance from the Queenstown Post Office:-

Section	Doolan's Creek (Alternative)		Rastus Burn (Proposed)		Assumed Average Speed
	Distance Miles	Time Minutes	Distance Miles	Time Minutes	
State Highway 6	17	34	6½	13	30 mph
Altitude 1000'-3500'	4½	18	4½	18	15 mph
Altitude 3500'-5000'	8½	51	3½	21	10 mph
TOTALS	30	103	14½	52	

1 hour 43 minutes as compared with 52 minutes

30 miles as compared with 14½ miles

These figures speak for themselves, especially in these days of increasing fuel costs.

(b) Terrain; from the aerial photographs the land appears very unstable from the end of Coal Pit Road to Coal Pit Saddle, where the new route would branch from the existing track to follow the water race at 3500 ft altitude.

(c) Altitude and Snow Drifts; This alternative road from Coal Pit Saddle should not go any higher because of snow problems on the South side of the Mt Edward to Mt Salmond ridge, and no lower because of difficulties climbing up Doolan's Creek between altitudes 2600 ft and 4000 ft. We have therefore for the purposes of the comparison made in (iv) (a) above postulated that a road could follow the disused water race, contouring around to the meeting with Doolan's Creek at 3600 ft altitude. From here to Terminal 2 at 5200 ft altitude would be very difficult going, climbing out of the gully on very steep and in some cases sheer side slopes.

As touched upon above, this South facing mountainside would be subject to very heavy snow drifting, especially at these altitudes of 3500 feet plus. The runholder, Mr Alan May, has, we gather, started a ridge road up from Coal Pit Saddle towards Mount Salmond past and south of Mount Edward on the same South face (we assume the North face is too steep from the photographs and contours). Mr May confirms this road is impassable in Winter till mid-Spring due to deep snowdrifts.

The only advantage with this Doolan's Creek route is that it would be "out of sight" from the Arrowtown area.

(v) Rastus Burn, the Proposed Route

As a final comparison may we sum up the advantages of the proposed Rastus Burn Road:-

(a) Ease of construction to altitude 2700 feet just below Trig G

(b) Ditto from 4500 feet to the end at 5000 feet right at Terminal 1

(c) Between these two altitudes 2700 feet to 4500 feet, road construction has normal but no exceptional difficulties

(d) Shortness in time and distance from Queenstown

(e) With the North to North-easterly aspect of the road above 2300 feet altitude, snow drifting will be a minor problem

(f) Provides, with the extension of Ski tow 2 over and down from the saddle at 6300 feet altitude, access to Terminal 2 and a whole new "ski-ing vista" yet remains a relatively short distance from Queenstown.

(g) Costs of construction would be about half of the alternative Doolan route, as would long-term maintenance costs.

The only disadvantage is that this road will be visible from the Arrowtown area and Highway 6 in this sector.

Conclusion

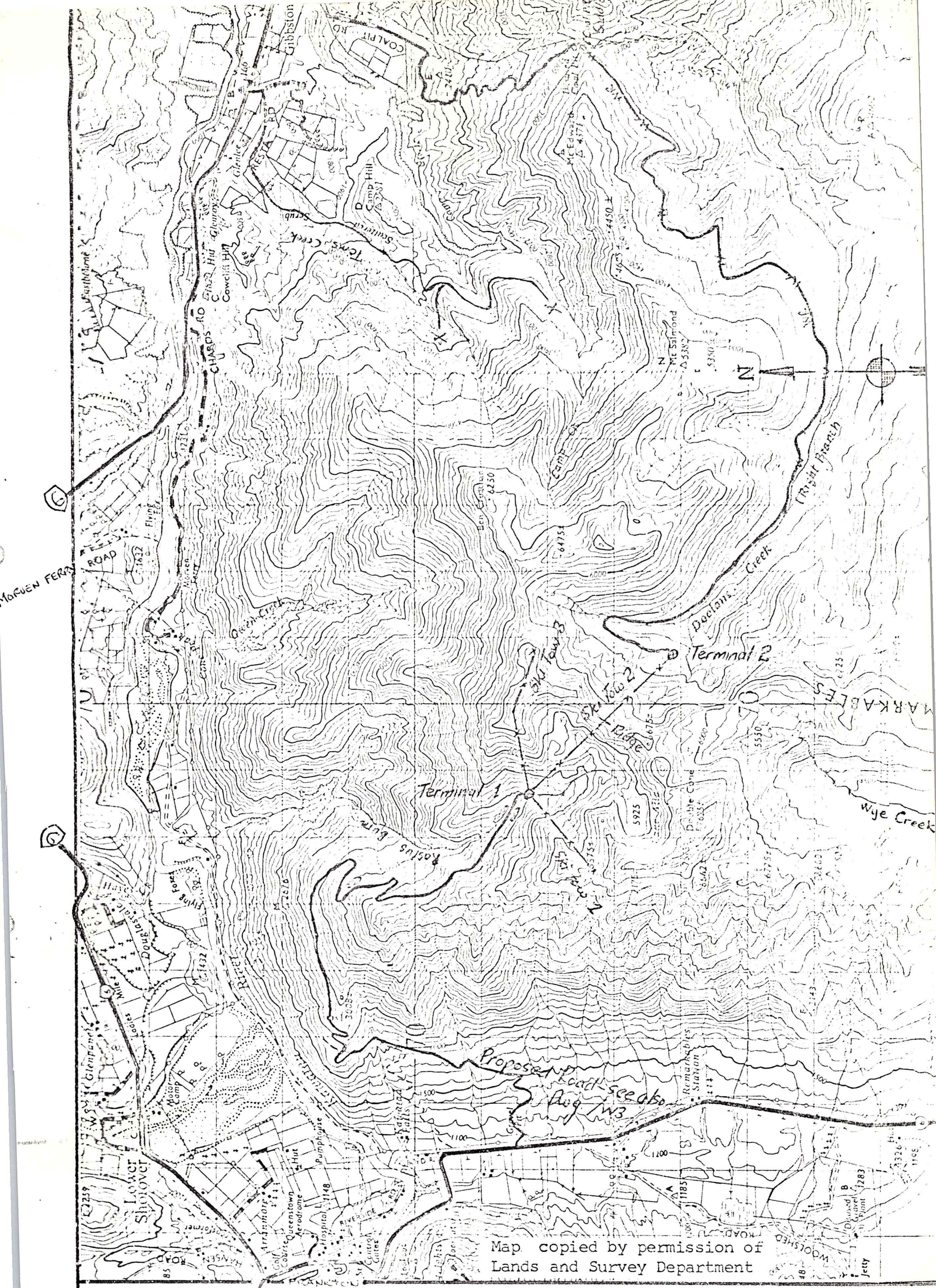
Without a doubt, after considering all the alternatives, the road via the Rastus Burn as shown on plan 7131-1/W5 is the only satisfactory means of access from a financial as well as a practical point of view, that is time and distance, effect on the environment etc.

Yours faithfully,

I.D. STEWART

IDS/EFW

Encls.



Map copied by permission of
Lands and Survey Department

PROPOSED ACCESS ROAD for Mt COOK TOURIST CO. LTD
ACCESS ROAD PLAN — ALTERNATIVES

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FREDERICK SHEPPARD AND PARTNERS
CONSULTING ENGINEERS

SCALE	1" = 80 CH.
DRAWN	I.D.S.
APPRVD	6.12.75

7131-1/W5

APPENDIX "B"

REMARKABLES SKI FIELD
CAPITAL EXPENDITURE PROGRAMME

Stage 1. Summer 1976/77

Cut first access road and begin some initial site preparation

Stage 2. Summer 1977/78

Build concrete bases for access lift and No.1 chairlift (Remarkables Basin lift)

Instal beginners' tows

Site work and landscaping slopes

Complete two-way road and begin car park areas

Construct Office buildings and equipment rooms

Purchase utility truck TOTAL STAGE 2:

Stage 3. Summer 1978/79

Instal access lift to No.1 chairlift

Further landscaping and ski trails

Complete car park areas

Construct common room, cafeteria and toilets

Purchase ski hire equipment

Purchase snow grooming machine

Full skiing facilities in 1977 Winter TOTAL STAGE 3:

Stage 4. Summer 1979/80

Build concrete bases for No.2 chairlift (North Basin Lift)

Access tracks and site work

Roading TOTAL STAGE 4:

Stage 5. Summer 1980/81

Instal No.2 chairlift

Landscaping slopes and ski trails

Additional car parking area

Purchase additional ski hire equipment

2 chair lifts operating during 1981 Winter TOTAL STAGE 5:

Stage 6. Summer 1981/82

Build concrete bases for No.3 chairlift

(Nevis Lift)

Access tracks and site work

First coat of sealing on road TOTAL STAGE 6:

Stage 7. Summer 1982/83

Instal No. 3 chairlift

Landscaping slopes and ski trails

Additional car park area

Purchase additional ski hire equipment

Final sealing of road and car park adjustments

3 chairlifts operating during 1983 Winter TOTAL STAGE 7:

TOTAL COST TO 1983:

ALL CORRESPONDENCE TO BE ADDRESSED TO THE "COUNTY CLERK"

LAKE COUNTY COUNCIL

P.O. BOX 25
TELEPHONE 304

BALLARAT STREET,
QUEENSTOWN, N.Z.

Appendix "C"

10th June 1974

The Assistant General Manager,
Mt Cook and Southern Lakes Tourist Co Ltd.,
P.O. Box 2646,
CHRISTCHURCH.

Dear Sir,

Proposed Double Cone; Remarkable Ski Field and Access Road

I refer to the visit to Queenstown to aquaint the Members of the Council of your Companys aims and objects in connection with the development of the Remarkables Ski Field and I am directed to inform you that from the information known of the proposal to date that the Council supports the proposal in principle subject however to the Environmental Report being acceptable and subject to all planning permissions being obtained.

Yours faithfully,

G. H. Bleakley
COUNTY CLERK

TELEPHONE 357
ALL COMMUNICATIONS TO BE ADDRESSED
THE TOWN CLERK
P.O. BOX 41
QUEENSTOWN

TOWN CLERK'S OFFICE
LOCAL GOVERNMENT BLDG.
STANLEY STREET
QUEENSTOWN

IN REPLY PLEASE QUOTE REF. NO.

Appendix "D"

BOROUGH OF QUEENSTOWN
NEW ZEALAND

23rd July, 1974.

Mr R.R. Forward,
Manager,
Road Transport Division,
Mt Cook & Southern Lakes Tourist Co;
P.O. Box 2086,
CHRISTCHURCH.

Dear Sir,

Establishing of Ski Field Remarkables

I refer to your recent informal meeting along with Mr R. Robinson with the Mayor and Councillors when you explained the Company's proposal to establish a second ski field on the Remarkables Mountain Range.

The Council has now given consideration to your Company's proposals and I am pleased to inform you that the following resolution was passed at its last meeting.

"That the Company be congratulated on its enterprise on planning such a development which is considered will be an asset when established and in the best interests of the District and furthermore that the Company be assured that the proposal has the support of the Queenstown Borough Council and that any co-operation or assistance required will be given."

Trusting your project receives a sympathetic hearing and favourable decision.

Yours faithfully,

R.C. Dick,
Town Clerk.

OTAGO CATCHMENT BOARD
and REGIONAL WATER BOARD
70 STAFFORD STREET, DUNEDIN

Appendix "E"

TELEGRAPHIC ADDRESS:
'CATCHMENT'

TELEPHONE 78-852
P.O. BOX 858

OUR REFERENCE ....

YOUR REFERENCE ....

25th July 1974

Frederick Sheppard & Partners,
Consulting Engineers,
P.O. Box 9044,
WELLINGTON

Attention Mr Stewart

Dear Sir,

Double Cone - Remarkables Ski Field
Classification of Land

I have received a report on the above proposal from my senior staff in Alexandra, Messrs G. Anderson and R. Brass and I add it to my letter below. The property concerned is one with which the Board has not had much contact, and therefore we have not carried out any detailed land use capability classification. However we have detailed information on the neighbouring properties and this has been used to help supply you with the answers to your queries.

Mr Anderson reports as follows:

"Double Cone Access Road - Land Classification & Erosion Potential:

Inspected offsite by R. Brass and G. Anderson 16/7/74. Refer mileage sections as shown on plan supplied.

1. Main Highway to Trig C. 2,900' (3m. peg) Classes 4 and 6. Rolling to moderately steep slopes. Slight erosion and depletion. Very limited problems expected on this section.

2. 3M. - 3M.60CH (3,000'):

Class 7. Arrow steepland soils. E slopes. Moderate erosion and depletion. Limited problems.

3. 3M.60CH. - 4M.:

Class 8e. Deepseated geological slump area. Anticipated problems with stability and accelerated erosion

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caused through accelerated runoff.

4. 4M. - 4M.70Ch.:

Class 7e. E slopes. The proposed route runs 900' above an active gully and sheet eroded minor catchment. Extreme care is necessary to divert runoff away from this area. (Over both sections very careful selection is necessary to choose the gullies or watercourses in a condition sound enough to cope with increased flows. Solifluction problems could be activated under lower slopes.)

5. 4M.70Ch. - 7M.70Ch.:

Class 8ec. Dunstan steepland soils 3,700'-5,000'. E/F slopes. Severe erosion of exposed batters and fill surfaces can be anticipated through wind and frost action. The stability of scree fans in the upper floor of the Rastus Burn should cause few problems where disturbed.

Summary:

1. Safe and adequate disposal of water off road and batter surfaces of prime concern along the length of the proposed route. Undue concentration of runoff down some gullies must be avoided. Concrete channel watertables may be necessary on some sections of the road.

2. Depending on altitude and aspect, moderate to severe wind and sheet erosion will occur on exposed surfaces along the length of the road.

This could be reduced by sowing and topdressing up to 3,500'. Above this altitude, hydrosealing or mulching would be necessary.

If revegetation is not assisted, recovery of native vegetation would vary from extremely slow to nil. The main problem is caused by wind action eating under turf edges causing collapses and slips which enlarges the area affected as well as the degree of erosion activity.

3. Between the section 3M.60Ch. - 4M.70Ch., the proposed route crosses through and above areas of high erosion potential. This will entail a great degree of care in construction. Not only to minimise onsite disturbance, but also to ensure that all runoff is safely disposed.

> Terrain, that this section is stated as being geologically stable. Also that from the 4M.90Ch. - 5M.70Ch. mark, the large boulders are the result of glacial deposition. This may be a matter of opinion, as it could be suggested that a great deal of boulder deposit is the result of geological erosion from upper areas."

It is only fair to point out to you that the Land Use Capability Classification system is used to recommend safe land use for agricultural and forestry purposes and it is tied closely to the susceptibility of various soils to erosion processes. Our planning involves the dispersement of sheep and cattle on tussock grasslands according to the capability of an area to withstand a certain grazing pressure. We have not become involved to date in recommendations for land use for recreational purposes such as the project with which you are involved, so our reporting is confined to our own field of work, and we cannot comment on suitability of use for your purposes.

The Board has standard specifications for access tracks on hill and mountain lands, but these are aimed at fine weather tracks capable of being used by landrovers using low gear in high ratio. This leaves the use of the low ratio box for bad conditions, or loaded vehicles carrying men for fighting purposes, etc. Grades must be less than 1 in 5 and cutoffs and culverts must be installed to prevent erosion and scouring of watertables. Your specifications meet the Board's requirements except for the matters mentioned in Mr Anderson's report.

I trust that the above information is helpful and that you will be conscious of the need to vegetate and disguise any access tracks you construct to the stage where they do not offend the environment.

Yours faithfully,

J Wallace Ramsay

J. WALLACE RAMSAY
CHIEF SOIL CONSERVATOR.

THE FEDERATED MOUNTAIN CLUBS
OF NEW ZEALAND (Incorporated)

P.O. BOX 1604, WELLINGTON

Appendix "F"

26th July 1974

Mr. I.D. Stewart,
Frederick Sheppard & Partners,
P.O. Box 12141,
WELLINGTON

Dear Mr. Stewart,

PROPOSED REMARKABLES SKI FIELD IMPACT REPORT
FINAL DRAFT

As a specialist member group, Co En Co have passed your final draft impact report for comment. Without a detailed inspection of the field we can only comment in general terms at this stage. However, we would make the offer of specialist advice from our members if such an inspection could be arranged. We would also use our good offices with the N.Z. Ski Association to bring about such a joint inspection.

General Proposals

The Executive of F.M.C. are in general agreement with the proposals, especially in so much as they should not bring about any alteration of the skyline of the Remarkables and will not lead to a large transient population in the Rashis Burn. The plans for rapid mass transport by buses and access tow is noted with approval. However, we would seek more information in the final impact report on the placement of tow 2 and the Tourist facility on the ridge crest north of Double Cone.

Current Recreational Use of Area

The report makes no mention of the impact upon existing recreational values. There is a limited, but increasing, interest in climbing Double Cone, in both summer and winter. Furthermore, Lake Alta is a pleasant camping site also increasing in popularity. Undoubtedly, the skifield road will improve access to Lake Alta and Double Cone but we would urge that the development not seriously detract from these existing recreational values. This could be done by:

- limiting mechanical access to the ridge crest and the upper part of the Rashis Burn watershed.
- keeping tow 2 as far to the East of Lake Alta as possible.

In this regard we note with some concern the statement under 3.(b).5

Contd.../

Appendix "G"

CoEnCo

New Zealand Conference on Environment and Conservation
P.O. Box 453,
Wellington. 1.
New Zealand

27 July 1974

Mr I.D. Stewart,
Frederick Sheppard & Partners,
P.O. Box 12141,
WELLINGTON.

Dear Sir,

Please find attached the submission prepared by our member organisation the Federated Mountain Clubs of New Zealand (Incorporated).

Trusting this will meet your requirements,

Yours faithfully,

J.B. Henderson
Secretary.

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Appendix "H"

WAKATIPU ENVIRONMENTAL SOCIETY

P.O. Box 64
Queenstown

29 July 1974

Mr R. R. Forward
Assistant General Manager
Mount Cook Company Ltd
P.O. Box 2646
CHRISTCHURCH

Dear Mr Forward,

The Society have asked me to convey their appreciation of your Company in supplying your confidential environmental impact report. The courtesy of providing the report indicates your genuine concern for the environmental aspects of the ski-field. You will understand that the Society of this nature is made up of people with varying opinions, and the Committee will give the report more detailed consideration at their next meeting to be held three weeks from now.

Once again thank you for making the report available and for personally presenting it.

Yours faithfully,
WAKATIPU ENVIRONMENTAL SOCIETY

B. C. THOMAS
Secretary

UNIVERSITY OF OTAGO
Box 56 Dunedin New Zealand

Appendix "I"

When replying please quote

Botany Department
12 August, 1974

Assistant General Manager,
Mt Cook & Southern Lakes Tourist Co.,
P.O. Box 2646,
CHRISTCHURCH.

Dear Mr Forward,

The following are my comments on the draft "Environmental Impact Report for Remarkables Ski Field".

The report appears to adequately cover the impact of access and the installations envisaged although it should be admitted that both of these will be obvious to all motorists on the Crown Range highway in addition to Coronet Peak and Shotover Saddle, all areas receiving increasing visitation. It is essential therefore that unnecessary scarring should be avoided by a careful survey of the route already flagged, especially the "difficult and awkward" section (Appendix A, p.2) between 4m 40ch and 5m 70ch. Placement of car parks and the number, location and design of buildings remains vague. Serious consideration should be given to restricting private cars to the proposed lower car park in view of the difficult and vulnerable terrain beyond this area.

As the report states (p.4) the facilities will be similar to those presently established at Coronet Peak and other New Zealand ski fields, but will reflect a design aimed at blending with the environment. There is considerable scope for such design improvements and such objectives are to be encouraged. No mention is made of tree planting as has been carried out at Coronet Peak and any plans should be discouraged so as to retain the natural character of the environment.

What does not appear to be sufficiently appreciated is the environmental consequences and potential problems of locating a ski field at a relatively high elevation (4900 - ca 6800ft), considerably higher than the Coronet Peak field (3900 - 5400ft). The Remarkables area is subjected to a much more severe environment than is the Coronet Peak field based on measurements made in both areas and some other mountain ranges in Central Otago. (Mark 1965a, 1965b; Mark & Bliss 1970.) The severity of the environment on the Remarkables area is obvious from the dwarfness of its vegetation and the species of alpine plants which are present. A study of these was made as part of a general survey of Central Otago high-alpine vegetation (see Mark & Bliss, 1970). In this study a 5-year record of various climatic factors at 5200ft near the summit of the Old Man Range was used to characterise the high-alpine environment. The relevant pages (385-9) of this paper are included with this report. More recently air temperatures were continuously recorded by Mr C.D. Meurk between June 1971 - December 1973 at 6700ft on The Remarkables between the proposed terminals of lifts 2 and 3. These data have not yet been fully analysed

but values for mean monthly air temperature and percentage of "ice days", "frost-free days" and "freeze-thaw days" per month (Table 1) when compared with values from the Old Man Range (Mark & Bliss, 1970, Figs 3 & 4) indicate generally similar and very severe temperature environments.

Wind speed from the Old Man Range site over a 2-year period at a height of 1.25 metres averaged 12.7 mph with little seasonal variation (Mark, 1965a) while 2 metres above ground level on the summit of Rock & Pillar Range, a 4-year average is 18 mph. Speeds of 30 to 50 mph are frequently experienced, especially during the summer period, on all Central Otago mountains, including The Remarkables. Growth rates of plants under such conditions are very slow and moreover their tolerance of disturbance, in particular frequent trampling, is extremely low. Once plants become eliminated from such sites, re-establishment is extremely slow since virtually continuous frost-heaving of the permanently moist soils makes plant establishment virtually impossible.

These aspects of the natural environment are important to consider in the planning of a ski field, particularly a field planned to accommodate 500 car loads and several bus loads of skiers. It is important that roading within the basin be kept to an absolute minimum, a situation that does not now prevail on Coronet Peak. Also, there should be no disturbance of the natural plant (or rock) cover to "improve" the topography of the ski slopes. Removal of the natural tussock cover and the rippled land surface, such as has occurred at Coronet Peak, must be avoided since introduced grasses will not recolonise such surfaces on the Remarkables site as they have done in most areas on the Coronet Peak ski field.

The proposed ski area is botanically and ecologically very interesting and instructive although there are no known unique features. Certain alpine plants with a predominantly western distribution reach their eastern limit on The Remarkables and occur in the area of the proposed development, e.g. Ranunculus buchananii, Anisotome pilifera, Aciphylla similis, Parahebe birleyi, but these should not be endangered if the area is developed along the lines proposed. An undescribed species of alpine scabweed (Raoulia cf. mammillaris) also occurs in the basin but is present on other parts of The Remarkables as well as on four other ranges in Central Otago. Probably of greatest ecological interest in the area is the occurrence here of the highest altitude populations of the slim snow tussock (Chionochloa macra). Some of the highest plants in fact occur near the top of the proposed No.2 lift and care should be taken not to eliminate these. Nearby, in upper Wye Creek, are small areas of snow patch tussock (Chionochloa oreophila) growing here at its eastern limit in Otago.

Even though the potential of the area for off-season (summer) sight-seeing and education is very high, the very severe climate would impose serious limitations, especially for school classes. Nevertheless, the proposal to develop off-season access to the top of No.1 lift seems desirable, provided no building is erected on the skyline. Any building in this vicinity should be faced in local stone to blend with the landscape. A well-maintained walking track from the skyline here, back to the bottom of the lift would be desirable to reduce vegetational damage by trampling of those visitors who will prefer to walk down hill.

The impact report is incorrect in claiming the area of proposed development receives little use at present. In fact the area is very popular for short, particularly week-end, trips because of its quick access, good all-weather accommodation in the rock bivouac beside Lake Alta, and above all, the magnificence of the alpine landscape in the Lake Alta - Double Cone region, i.e. in the basin being suggested for the ski field. The proposed development will undoubtedly mean that more people will visit the area for tramping and general recreation with the result that its capacity for such activities may well be quickly exceeded. Studies to initiate long-term monitoring of the impact of development on the area's plant cover should be accepted as part of the environmental impact assessment.

Table. Estimated mean monthly air temperature (°C) for a site at 6700ft in the upper basin near the ridge crest between the proposed terminals of Lifts 2 and 3. The mean (average) percentage of ice days (below freezing throughout), frost-free days and freeze-thaw (alternation) days per month during the 31-month period of recording (June 1971 - Dec. 1973) is also included. Data from Mr C.D. Meurk (personal communication).

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	ANN
Mean monthly		5.3	6.5	5.2	2.2	-2.5	-3.2	-1.3	-2.0	-0.1	0.5	1.8	4.8	1.75
% DAYS	Ice days	16.5	0.0	3.0	5.5	35.0	53.5	28.0	30.5	17.5	16.0	13.0	0.5	18.3
	Freeze-thaw days	34.5	16.0	30.5	48.0	62.0	46.5	72.0	69.5	76.0	55.0	60.5	33.0	50.4
	Frost-free days	49.0	84.0	66.5	46.5	3.0	0.0	0.0	0.0	6.5	29.0	26.5	66.5	31.3
No. days for calc.		37	57	62	58	31	43	59	62	52	31	44	65	601

I trust that you will find this information and general comment of some value in finalising your report.

Yours sincerely,

A.F. Mark

A.F. Mark
Associate Professor

References cited:

Mark, A.F. 1965a: Vegetation and mountain climate. In "Central Otago". N.Z. Geogr. Soc. Misc. Ser. 5: 69-91.

________. 1965b: The environment and growth rate of narrow-leaved snow tussock, *Chionochloa rigida*, in Otago. N.Z. Jl Bot. 3: 73-103.

Mark, A.F. & L.C. Bliss 1970: The high-alpine vegetation of Central Otago, New Zealand. N.Z. Journal of Botany 8: 381-451.

Royal Forest and Bird Protection Society
OF NEW ZEALAND INCORPORATED (Founded 28th March, 1923)

Patrons:
His Excellency The Governor-General of New Zealand, Sir Denis Blundell, G.C.M.G., G.C.V.O., K.B.E.
Her Excellency Lady Blundell.

OBJECTS: The protection and preservation of flora and fauna native to New Zealand and all natural features of the country. Encouraging appreciation of our natural resources and outstanding scenery. Preservation of national parks, scenic reserves, fauna and flora reserves in their natural state.

Head Office: P.O. Box 631, Wellington.

Appendix "J"

22nd August, 1974.

Mr. I.D. Stewart,
Messrs. Frederick Sheppard and Partners,
Consulting Engineers,
P.O. Box 12-141,
WELLINGTON.

Dear Mr. Stewart,

Responding to your letter of the 12th August concerning the Impact Report on the proposed Remarkables Ski Field, I referred this to our Otago Branch and also to our Executive representative in Southland.

My personal concern was largely connected with the proposed ski tow. I have a high regard for the wonderful profile of mountain ranges visible from Queenstown, and I would regard any man-made break in that profile with strong disfavour. However, it would seem that this will not occur. Our Otago Branch reports that the towers and cables will not be visible, as they will be in a basin near Lake Alta, behind the Remarkables ridge top. Although they will be on view from the main road, four miles away, near Lake Hayes, they be clearly visible only through binoculars.

The No. 1 tow likely to transport people on scenic trips to the top of the Remarkables ridge, 6,420 feet, will have a tower on top, but it is doubtful whether this will be visible for any distance.

I would recommend that care be taken in this matter, to make sure that towers and cables do not mar the wonderful scenic views in this wonderful scenic area.

On the question of the access road, Otago Branch has written, - "The road will definitely be seen from most angles, as it is an extension of a track shown on the Wakatipu map. It sidles round below Trig G, 3,008 feet, on the sunny aspect above the Kawarau River, and thence into the Rastus Burn Catchment and up to 5,500 feet below Lake Alta. It will be simple to revegetate any disturbed ground below 3,500 feet, but from there on it is climatically difficult. Reliance will have to be on native plants - snow tussocks and celmisias, etc."

We understand that the promoters will be building the road in accordance with Catchment Board requirements, especially for soil and water control purposes, and that measures will be taken to deal with scour and water runoff and with erosion control associated with this road.

Our Society recommends that approval of this project be given, on the basis that revegetation of the area with native plants to disguise the road-line as much as possible be carried out. The Otago Branch recommends a study of Alan Mark's work on snow tussock transplants for this purpose.

Yours sincerely,

C Langford

C. Langford
Secretary.

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TELEPHONE:
51 869

Nature Conservation Council
BOX 5014, WELLINGTON, NEW ZEALAND

26 August 1974.

Appendix "K"

Messrs.F.Sheppard & Partners,
Consulting Engineers,
P.O.Box 12-141,
WELLINGTON.

REMARKABLES SKI FIELD
IMPACT REPORT FINAL DRAFT.

Dear Sirs,

Thank you for your letter and enclosures of 12 August and also the information and assistance given to Mr.Whitwell on the recent inspection.

In the limited time available it has been decided to advise you that this Council does not oppose the scheme in principle. However, it is concerned about the visual effect of the access road and would expect the work to be supervised closely and no excess spoil to be tipped over the side of the road formation. If the proposal is to proceed, it is suggested that the road be properly constructed at the start and it is also suggested that sealing be investigated now, rather than later. No mention of communications is made and if telephone is to be used, then the line should be underground and in particular no poles should be visible from Queenstown.

However, if there can be a guarantee that there will be no structures on the ridge itself or lookout point or earthworks to mar the natural form of the Remarkables view from Queenstown, then this Council would concede that access may provide a worthwhile experience for many people.

This Council does however, have strong reservations about the desirability of providing tourist access to the summit ridge of the Remarkables, because of the necessity of protecting well known peaks from becoming concourses and because of the danger of inexperienced and ill-clad persons wandering off.

This proposal does highlight the future of the Remarkables region and a separate recommendation is to be made to the authorities concerned that a suitable area should be set aside as a fully protected reserve and clearly defined.

Yours sincerely,

N.J.Robinson
Secretary.

F. J. SHEPPARD
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26th August, 1974.

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Appendix "L"

Dear Bob,

I was very impressed with the new ski field that we looked at in the Remarkables on Sunday the 25th of August. There were three things that I specially noted about the area that I thought would be of interest to you.

1. The excellent snow conditions that we skied on. For a fortnight of clear weather in the Queenstown area I thought we would run into very icey conditions but the high altitude proved to be of great advantage and excellent skiing conditions and that there was a crust of only half an inch deep and throughout the different areas we skied all the skiing conditions were excellent.

2. There was the great variety of terrain that was located in the basin. The excellent advanced skiers slopes as well as a large area for beginners and a great terrain for the intermediate and average skier. In the large basin where number three lift is proposed, it is one of the best in the area that I have seen in my travels. Its great width and a great variety of terrain. The large flat area in the middle of the basin will prove to be excellent for ski school use in teaching beginners the fundamentals of skiing. Any ski school director would be envious of the large terrain available for elementary instruction.

3. The close proximity of Queenstown with all its transport facilties. Many times there are large skiing areas but they are very hard to reach and very impracticle because of this reason but this basin in the Remarkables proves to be quite close to a main transport center. I am sure that the area will be put to good use by many avid skiers throughout New Zealand. The combination of the three great assets of the area snow, terrain and easy access should help a great deal in affording a place for the many new skiers in New Zealand to participate in this fast running sport.

Best regards.

Ron Sargent.

Ron Sargent,
N.Z. National Ski Team Coach

NEW ZEALAND HISTORIC PLACES TRUST

P.O. Box 12255 WELLINGTON
TELEPHONE [illegible] 391

Appendix "M"

PLEASE REFER TO
HP 9/-

2 September 1974

Frederick Sheppard & Partners,
P.O. Box 12141,
WELLINGTON. Attention Mr Stewart.

Dear Mr Stewart,

REMARKABLES SKI FIELD.

Thank you for your letter of 12 August.

The proposals have been checked by our local representatives, and I can now confirm that nothing of historical interest is affected.

Yours faithfully,

(J.R.S. Daniels)
Director.

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5 Pipitea Street, Wellington 1, New Zealand

new zealand
ski association
inc.

AFFILIATED TO THE FEDERATION INTERNATIONALE DE SKI

HON. SECRETARY: P.O. BOX 2213, WELLINGTON ★ ★ TELEGRAMS "PEAKOSERVE"

Appendix "N"

4 September 1974

Mr R.R. Forward
Assistant General Manager
Mount Cook & Southern Lakes Tourist Co Ltd
Private Bag
CHRISTCHURCH

Dear Mr Forward

Remarkables Skifield

You have asked the New Zealand Ski Association for its views on the proposed Remarkables skifield near Queenstown, and we have pleasure in advising as follows:

1. To assist our consideration of the proposal, you have through your consulting engineers, Messrs Frederick Sheppard & Partners, supplied us with a copy of the final draft of the Environmental Impact Report, and of the following letters:

(i) Lake County Council (10 June 74)

(ii) Borough of Queenstown (23 July 74)

(iii) Otago Catchment Board (25 July 74)

(iv) Co En Co (27 July 74)

(v) The Federated Mountain Clubs of New Zealand (Inc) (26 July 74)

(vi) Wakatipu Environmental Society (29 July 74)

(vii) Associate Professor A.F. Mark, University of Otago (12 August 74)

(viii) Royal Forest and Bird Protection Society (22 August 74)

(ix) Nature Conservation Council (26 August 74)

2. In addition, three representatives of the Association were members of a party which by your kind arrangement visited the proposed field on Sunday, 25 August 1974. These were Mr I.A. Borrin (President), Mr R.J. Estall (South Island Vice-President), and Mr R. Sargent (of Boise, Idaho, the Association's national racing coach).

3. We welcome your Company's initiative in exploring the

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feasibility of a skifield in the Remarkables and we warmly support your plan to proceed with its development.

4. The need in New Zealand for a new ski area in a suitable location is widely recognised and cannot be the subject of dispute. Skiing is developing rapidly in popularity throughout the country, and existing fields in both islands are either unable to cope with the numbers visiting them or are nearing that point. Further, a number of them are limited by unreliable weather and snow conditions, by difficult access, by lack of accommodation, by old-fashioned lift facilities, or by a combination of these. On the other hand, as skiing has spread amongst the general population, rather than being confined as in earlier days to a comparatively small community of winter sports enthusiasts, and as the general standard of skiing has improved with modern techniques, equipment, and coaching, skiers have come to demand more modern lift and accommodation facilities, and more dependable weather and snow conditions, than are available at a number of fields. Coronet Peak has the advantages of generally stable weather and good snow, together with an attractive and well-developed accommodation base in Queenstown. These factors, together with modern lift facilities, attract skiers each season in substantial numbers not only from all over New Zealand but also from Australia and, in lesser numbers at this stage, from Japan and North America. The facilities at Coronet Peak have been improved by the installation this year of the Greengates chairlift but there is no further room for major development, and your Company estimates that within a few years the field will be unable to cope with the numbers attending.

5. With such considerations in mind you have explored the possibility of a further skifield in the Queenstown area, as in this way advantage could be taken not only of the area's comparatively stable weather but also of the existing and developing accommodation pool at Queenstown, and of the fact that Queenstown lies on well-established air and road routes. Your investigations have led to the present proposal.

6. The proposed field is in a large, essentially north-facing basin which roughly speaking lies behind Double Cone peak as the latter is seen from Queenstown, and which is drained by the Rastus Burn which flows from Lake Alta and eventually joins the Kawarau River. Three areas which adjoin the principal valley are in contemplation for use as ski slopes and, as these are at present unnamed, they may be referred to for convenience as the Double Cone Basin (served by lift 1 on your plan), the Alta Basin (lift 2), and the East Basin (lift 3). We understand from you that if the proposed access road is constructed the field will, in road distance from Queenstown, be almost identical with Coronet Peak.

7. The party which visited the area on August 25th was landed by helicopter on a ridge overlooking the entire area. An inspection was then made on skis of both the East Basin and the Double Cone Basin. Although time did not permit a visit to the Alta Basin, it lies directly beneath the ridge on which the party landed and it was seen from there.

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8. The proposed ski slopes are of great appeal. Firstly, their size is sufficient to warrant a major development. Secondly, the terrain has great variety so that the area can cater for all levels of skier, from learner to advanced, and there are ample slopes suitable for the intermediate-level recreational skier, the most numerous category.

9. We understand from you that the uphill facilities will be modern in style, namely chairlifts and platter lifts (together with learners' rope-tows). You have told us that you are confident of overcoming any problems with the lifts which may arise because of the cold temperatures which it appears will be encountered.

10. The altitude of the proposed field is an important factor, being some 1000-1500 feet higher than Coronet Peak. This will mean not only more dependable snow than at Coronet Peak but also a much longer season, a point of considerable value in our eyes. There is not available any systematically collected data as to snow conditions in the proposed area and so one cannot make any statement on these with scientific certainty. However, we understand that you have available photographs going back some twenty-five years which show a consistent snowline. Further, we understand that you visited the area on October 17th last (by which time of course the Coronet Peak season had ended) to find skiable snow of considerable depth. Finally, the party of August 25th found an excellent covering of dry snow which did not deteriorate under the warm sun of a fine day. The snow was covered by only a thin crust, with no evidence of ice anywhere in the area.

11. With regard to the weather, there are available the figures on air termperature given by Professor Mark in his letter to you. These indicate that, on the higher slopes, on a majority of days during the ski season the temperature fluctuates across freezing point and that this, moreover, continues into November. Monthly averages from May to September (inclusive) are below freezing. No information is available, so far as we know, concerning wind, precipitation (other than the above details as to snowfall), or conditions of fog and mist affecting visibility. Each of the proposed ski basins is so placed as to get several hours' sunshine daily; in the absence of detailed observations one cannot be more precise than that.

12. Mr Ron Sargent has sent to Mr Forward personally a note concerning the proposed field and you have his approval and ours to make such use of this note as you wish (we have a copy of it). Mr Sargent is both an accomplished skier and an experienced coach who has travelled widely and has visited most if not all of the principal ski resorts of the world.

13. The altitude of the new field raises some matters of mountain safety. A competent ski patrol will obviously be required, and this will no doubt be called on to deal, not only with the usual skiing injuries, but also with cases of exposure and of "mountain sickness", especially amongst those who are unaccustomed to altitude and to the mountains in winter. Further,

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while there is in the area a welcome absence of hazardous bluffs, there may be injuries through skiers running into rock outcrops, a class of accident not known at Coronet Peak. The Association has in its member Clubs many who have received expert training (from, for example, the late L.D. Bridge) in the recovery of injured people from difficult slopes and in their first aid treatment, and we will gladly make available to you any help and advice which you may care to seek in these matters. It will no doubt be desirable, to cover sudden changes in weather, for there to be erected a building of sufficient size to provide shelter for visitors to the field while awaiting transport downhill.

14. As your proposals have gone to such bodies as the Nature Conservation Council and Co En Co, and will be submitted to the Commission for the Environment, there is no need for us to address ourselves to the environmental aspects, but we do note that you are concerning yourselves with minimising the disturbance to the area from such works as the access road, the power and telephone lines, and the lifts, and this we welcome. We understand that you are in addition willing to take steps to mitigate the effects of the scheme on the vegetation of the area.

15. It is worth referring, in connection with summer use of the proposed facilities, to the outstanding view from the summit ridge above the planned first lift; while this is for others to judge we would think it likely that, with suitable safety precautions, the proposed lookout point combined with the lift will become a worthwhile tourist amenity in its own right.

16. The New Zealand Ski Association supports the development of the Remarkables skifield and wishes you well in this major undertaking.

Yours sincerely

I.A. Borrin
President

APPENDIX "O"

Appendix O.

Hamilton
Engineering

C.W.F. Hamilton & Co. Ltd

Lunns Road
Middleton
P.O. Box 709
Christchurch
New Zealand

Telephone 44-179
Telegrams/Cables 'Hydraulic'
Telex: 'Hitrac' NZ4244

RECEIVED
1 DEC 1975

PAB:BDP
28th November, 1975

Mt Cook & Southern Lake Tourist Co. Ltd.,
Private Bag,
CHRISTCHURCH.

ATTENTION: Messers R. Forward and D. Rogers

Re - Remarkable Ski Area Project

Dear Sirs,

Further to our letter of 20th October 1975, which gave estimated costs of Pomagalskis Gondola Cableways - we wish to confirm our verbal confirmation that the costs given were for one lift for each line.

Therefore to get an up-hill capacity of between 3000-3500 p/hr for any one line these costs would be doubled as 2 instalations would be needed.

Hence ski field access from D to C for approx. 3500 Persons/hr could be expected to cost approx. $6,000,000 installed.

We hope to have profile drawings of the lifts ready in a few days.

Yours faithfully,
C. W. F. HAMILTON & CO LTD

P. A. Beecroft,
CONTRACTS MANAGER - SALES

APPENDIX "O"

Hamilton
Engineering

C.W.F. Hamilton & Co. Ltd

Lunns Road
Middleton
P.O. Box 709
Christchurch
New Zealand

Telephone 44-179
Telegrams/Cables 'Hydraulic'
Telex: 'Hitrac' NZ4244

PAB:AES
20th October, 1975

Mt Cook & Southern Lakes Tourist Co.
P.O. Box 2646,
CHRISTCHURCH

ATTENTION: Mr. R. Forward

Dear Bob,

re Remarkable Ski Area Access

Further to our recent discussions concerning this access problem we are able to advise you that a very approximate cost of equipment to provide access to the various points listed is as follows.

Line A C	$1,000,000.00
Line AB	$ 600,000.00
Line BC	$ 600,000.00
Line DA	$ 950,000.00
Line DC	$2,000,000.00

The maximum hourly capacity for one single lift would be approximately 1800 per hour and to achieve figures of 3[illegible]-3500 as you originately requested would require a duplication of the lift equipment.

Pomagalski advise us that something like 50% of the equipment cost should be added to the total cost of the project to cover civil engineering and building construction etc.

We hope the above budget figures gives you some useful guide for accessing your ski field access problem.

King regards,

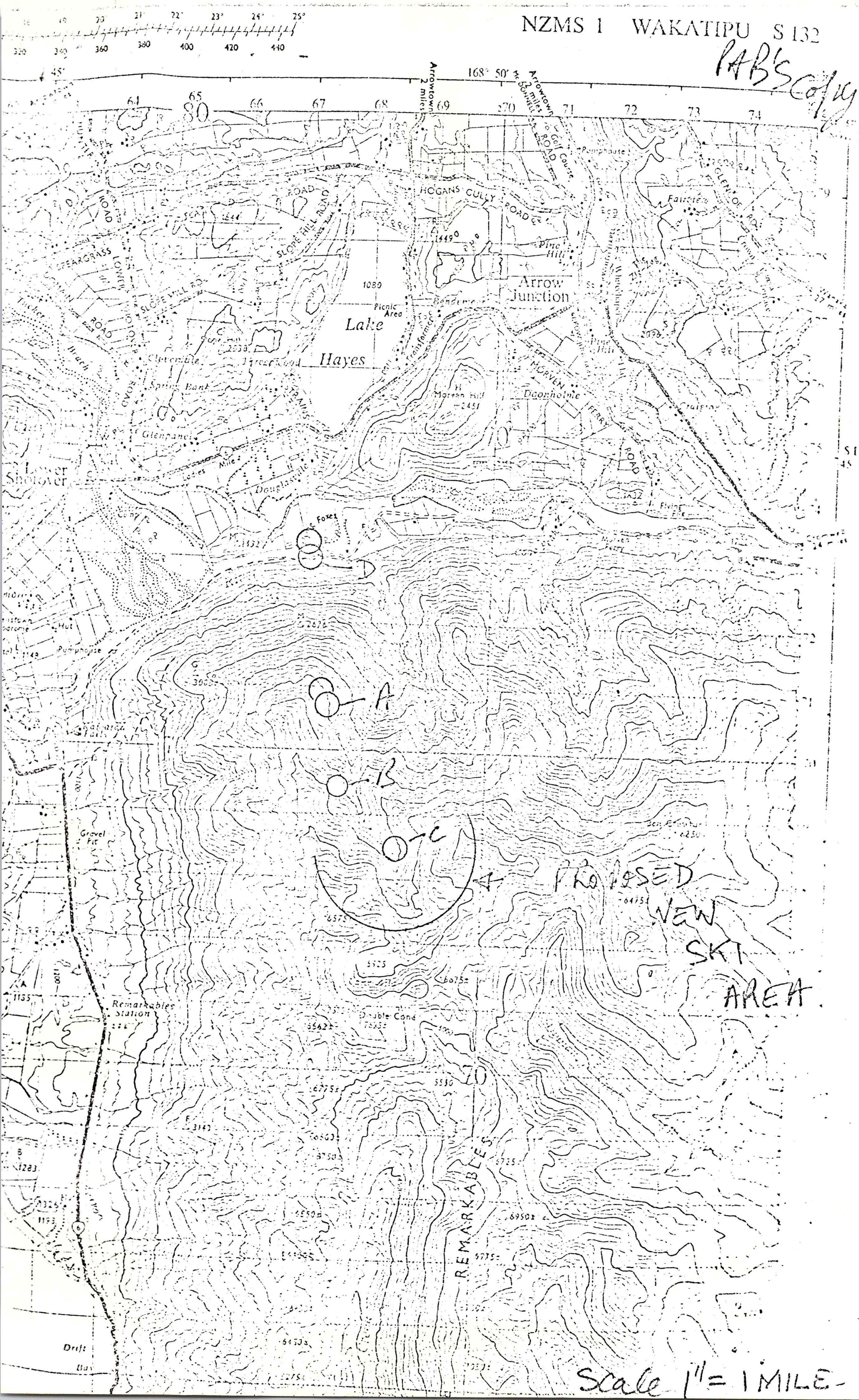
Yours sincerely,
C.W.F. HAMILTON & CO. LTD.

P.A. Beecroft,
CONTRACTS MANAGER - SALES

Encls. Map S132

NZMS 1 WAKATIPU S 132

PAB's Copy



Scale 1" = 1 MILE

APPENDIX "P"

Vacation Hotels Limited

HEAD OFFICE: 187 Campbell Road, One Tree Hill, Auckland.
POSTAL ADDRESS: P. O. Box 17-042, Green Lane, Auckland 5, New Zealand.
TELEPHONE: 664-179 TELEX: VACATON NZ2369.

Auckland
Queenstown
Fox Glacier
Te Anau
Wanganui

RAH/amg 26th September 1975

Mr R. Forward,
General Manager,
Mount Cook Southern Lakes & Tourist Co,
Private Bag.
CHRISTCHURCH:

Dear Bob,

Our company is extremely interested in the development of the Ski Fields behind the Remarkables.

As you are aware, we have a very large stake in Queenstown, and in fact are the largest Hotel Operators in that area, by far. The Hotel industry is becoming a very competitive one and in fact, operating costs are out stripping to a very large degree, our ability to pass these costs onto the customer. Because of this, we have to look at better utilisation of the plant involved and to keep operating costs down, a higher occupancy would certainly be the only way of being able to do this.

Many people believe that the Hotels in Queenstown are built for the Skiing season and that the summer trade is complimentary to this. This, of course, is not true and in fact the skiiers only help us through that disastrous four months gap of the year when tourists are noticeable by their absence.

An indication of Queenstown's growth is given in these figures.

NINE YEARS 1966/67 - 1974/75:

	1966/67	1974/75
Capital Value of Land & Improvements	$10 million	$37 million
Hotel and Motel Beds	712	1,670
Airport Passengers	20,286	54,340
Population	1,724	2,610

On the accommodation side, there are two distinct peaks in November to March and again in August. The slackest period is June and July, when skiing is not at present available. The common annual length of visitor stay is 2 to 3 nights, but longer in the August school holidays.

Tourist accommodation provides year round employment for 400 employees with an additional 200 job opportunities in peak time. It is interesting that 37% of Queenstown's work force is employed in Hotels and Restaurants while the average for all New Zealand is only 3%. This illustrates the economic importance of our industry to the community.

Cnt./...........2

The tourist plant in Queenstown includes 12 licenced Hotels, 3 unlicenced ones with Restaurants, 20 Motels and 6 Motor Camps, with 1,072 units. There are also tourist flats with 200 beds, youth Hostel, and private homes offering accommodation. The 40 Hotels and Motels offer 735 rooms or 1,765 beds with the capacity to add another 133 additional divan beds. This represents a very large money investment, which for part of the winter months is under utilised as the following occupancy levels show :

MONTH:	LICENCED HOTELS	UNLICENCED HOTELS	MOTELS	MOTOR CAMPS
JUNE	29%	22%	44%	25%
JULY	39%	27%	53%	25%
AUGUST	57%	88%	83%	35%
SEPTEMBER	46%	32%	62%	17%

For some years, as you are aware, we have worked with you in supplying special tariffs to promote this time of the year to try and help our Hotels become viable propositions, and it is no trade secret that one of the Hotels in Queenstown was in financial difficulties.

I understand that your investigations show that there is skiable snow on the Remarkables area from June on through September, and this would make use of the available beds. It would also remove some of the uncertainty which presently applies to the Coronet field and undoubtedly inhibits forward bookings.

There is no way that we, and I am sure, any other Hotel organisation, would build Hotels for the Skiing season even if it were to be of four months duration, as our experience is dictated by the summer tourist season. I would see no possibility of the development of this ski field encouraging anyone to build Hotels, Motels or any other type of accommodation in Queenstown, in view of the above figures.

Another pertinent point for consideration is if the chairlifts were operated in the summer months up the Remarkables, this would add another great asset to the area which could do nothing but help the Hotel industry and the commercial interests at large, and I do not see that it would be detrimental or have any effect on anyone living in the area.

Naturally, my company would want this development to be carried out without any detriment to the environment and considers that this can be assured by following the present environmental enhancement and reporting procedures. An audit of the Environment Report your company has prepared, perhaps expanded where necessary to cover additional factors, should provide all necessary safeguards, and we support this move.

Cnt./.........3

From an overseas earnings point of view it is interesting to note that we are attracting more and more Australians to this country for the skiing season and this is becoming a major earner of overseas funds, which is surely in the public interest and should be taken into account when consideration is given to such a project.

We support you in every way possible and should there be any further way in which you require us to help you to get this scheme under way, please do not hesitate to contact me.

Yours faithfully,
VACATION HOTELS LIMITED:

R.A. Henderson

R.A. Henderson.
GENERAL MANAGER:

APPENDIX "R"

TRANS HOTELS (N.Z.) LTD

HEAD OFFICE: 110 MANDEVILLE STREET, RICCARTON, CHRISTCHURCH, NEW ZEALAND. PRIVATE BAG,
TELEPHONE: 488-869, TELEGRAPHIC: TRANSTOURS, TELEX 4203.

16th October 1975.

Mr. R. Forward,
Asst. General Manager of Land,
Mt. Cook & Southern Lakes Tourist Co. Ltd.,
Private Bag,
CHRISTCHURCH.

RECEIVED
OCT 1975

Dear Mr. Forward,

re: PROPOSED REMARKABLES SKI FIELD

I would like you to be aware of our Company's whole-hearted support for the above proposals.

We see many benefits to many people in this proposal, none the least the "spreading" of the tourist season in Queenstown.

We were extremely disappointed with the season just completed, and we are concerned that the people who visit Queenstown for Winter sporting activities will be permanently swayed away by the poor snow conditions which frequently occur.

There is little doubt that Queenstown needs this added facility, and the current plant in Queenstown can easily cope with the increased visitors it would attract.

If there is any way in which we can assist with the project, please do not hesitate to contact us.

Yours sincerely,

D.A. Hurst

D.A. HURST
General Manager

TRANS HOTELS, 'THE FRIENDLY HOSTS'

APPENDIX "S"

TRAVELODGE

TRAVELODGE NEW ZEALAND LIMITED A.N.Z. House, 203 Queen Street, Auckland, 1. TELEPHONES: 374-108, 378-2

RECEIVED 3 OCT 1975

September 30, 1975.

Mr R. Forward,
Mt Cook & Southern Lakes Tourist Co Ltd,
Private Bag,
Christchurch

Dear Mr Forward,

It is with considerable interest that this company has been following the attempts of your organisation to have approvals to establish and operate a ski field in the Remarkables. I think the winter which has just passed fully confirms the need for a proven ski field. The season just experienced has been disappointing in the extreme with intermittent snow on Coronet Peak and as a result there were wholesale cancellations at short notice with the resultant disastrous trading, certainly by TraveLodge and, I am sure, bythe other hotel interests.

It always surprises me that there are groups who are prepared to inhibit development which can so obviously bring so many benefits to the town of Queenstown itself and to those companies who have invested capital in that locality. A survey of occupancy figures in the winter months shows that if this field could virtually guarantee a ski season from June to September, then hoteliers could look forward to a much greater and more satisfactory return on their invested funds which certainly is not the case right now.

We hear so much talk about the need to stagger holidays and to make better utilisation of existing plant, equipment and personnel and here is a first class opportunity to achieve all those aims. There is no doubt in my mind that existing accommodation operators would really welcome this scheme. I am equally sure that with devaluation we could expect an increase in skiers and other tourists from Australia which could produce urgently needed overseas funds.

Whilst the Coronet Peak ski field is widely acknowledged as being in world class, with the addition of the Remarkables which obviously has the potential to be a better ski field, then Queenstown, the South Island and New Zealand would really be put on the world map as a ski resort.

POSTAL: P.O. Box 3921, AUCKLAND, N.Z. CABLES & TELEGRAMS: TRAVLEX TELEX: N.Z. 2538

APPENDIX "S"

You can certainly count on the support of TraveLodge in your endeavours to bring about a much needed ancillary attraction to those already existing in Queenstown.

Yours sincerely,

Ben Allen

D.W. Allen
General Manager

APPENDIX "T"

Department of Zoology
University of Canterbury Christchurch 1 New Zealand

29 July 1974

Mr R.R. Forward,
Assistant General Manager: Landlines,
Mount Cook Landlines,
Private Bag,
CHRISTCHURCH.

Dear Mr Forward,

Environmental Impact Report for the Remarkables Ski Field near Queenstown

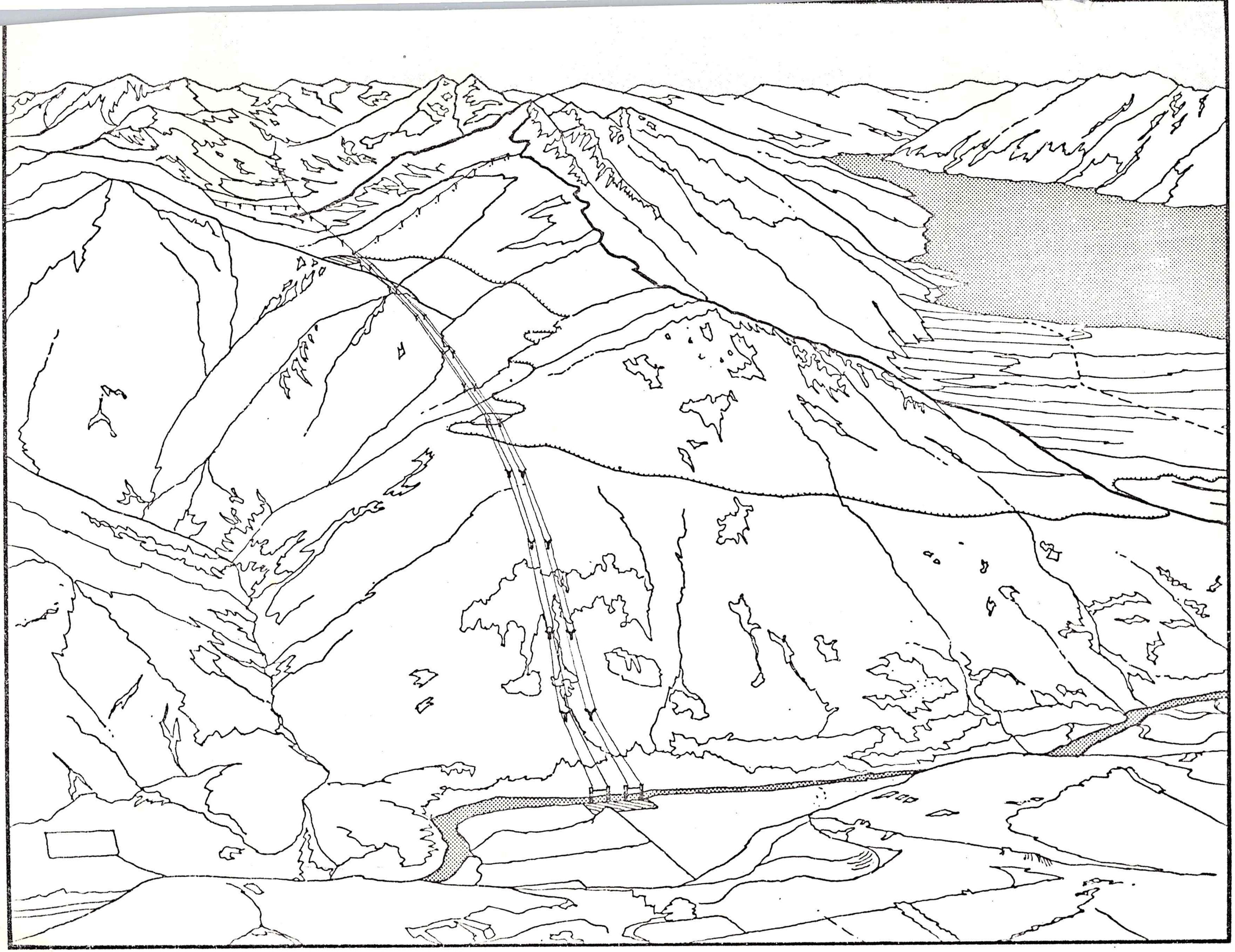
The Mount Cook and Southern Lakes Tourist Company Ltd is to be commended for the Impact Report it has prepared concerning the above development. Provision of recreational facilities in this region are urgently required. However, developments should be carefully planned in order to minimise their environmental impact and so as not to obtrude visually. The proposed development has been most carefully planned in all these respects.

The planning of the road with the safeguards detailed in the report is along sound environmental lines. Every effort should be made to revegetate the batters and embankments as outlined. Landscaping could also assist.

Providing qualified botanists can give assurance that no unique plant communities will be affected, I can see no reason why the project should not go ahead as planned. I would therefore support approval for the proposal.

Yours sincerely,

G.A. Knox
Professor of Zoology;
Director, Environmental
Defence Society.



ARTIST'S IMPRESSION OF MECHANICAL AND PROPOSED ROAD ACCESS (Refer Page 5 for Choice of Access)